A Clinical Lecture

ON

PAROXYSMAL DYSPNOEA IN CARDIO-RENAL PATIENTS:

WITH SPECIAL REFERENCE TO "CARDIAC" AND "URAEMIC" ASTHMA.

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DURING the past few years interest in the question of dyspnoea has awakened very considerably. I propose at the present time to relate some observations made at the hospital during the past twelve months, which, so it seems to me, help us to a fuller understanding of breathlessness in a large group of patients who have evident signs of cardiac disease. I will first direct attention to a special type of breathlessness from which patients suffer, indicate how far we can explain this breathlessness, and how it may be recognized. Finally, I shall briefly discuss the nature and relations of "cardiac" and "uraemic" asthma, so-called, and suggest certain lines of thought and procedure, which may, I think, bring us into closer touch with the realities of disease in these patients.

A SPECIAL FORM OF DYSPNOEA.

First I would direct your thoughts to instances of simple cardiac dyspnoea. There are forms of congenital heart disease and of extreme mitral stenosis in which, as you come to the bedside, you immediately recognize a deficiency in the aëration of the arterial blood. The patients I would have you call primarily to mind are those in whom you have seen deep or extreme cyanosis. Some of these patients are very breathless, but it is notable that in many others, especially those who suffer from congenital heart defects, the anxiety of breathing is not severe while they lie at rest. From such observations I argue that if dyspnoea is due to deficiency in the aëration of the arterial blood, cyanosis will be prominent, and, by a comparison of many cases, that urgent dyspnoea, if of the same origin, must be accompanied by extreme discoloration. Next I would point out that a very large proportion of patients who exhibit great anxiety of breathing and have evident signs of cardiac disease, do not exhibit this degree of cyanosis. It is a well-known fact that in heart disease breathlessness and cyanosis are often shown in disproportionate degree, yet the significance of this fact has, I think, escaped attention. Why it has so escaped I shall attempt to explain later. At present let us be content with the observation and the natural conclusions to be drawn from it. If a patient is urgently breathless and an equivalent cyanosis is not found, the dyspnoea is not wholly due to deficient aëration of the blood. You can rarely pass through the wards of this hospital without seeing a number of patients sitting propped up with pillows and in great distress of breathing; examine these cases more closely and you will see that some of them have but little cyanosis. These patients belong to the special group which I shall now describe, and for descriptive purposes I shall give the relevant features of an extreme case.

In the early months of this year I saw a man, aged 57, who for twelve months had experienced failing health. Breathlessness was his chief complaint, and it was periodic in its intensity. For months he would be well, or comparatively so, then for weeks his breathing would be difficult, so that active movement was impossible, and he would lie up. During the periods when he was in bed he was continually breathless, and he dreaded the nights because his breathlessness increased during them; often he was awakened from his sleep by attacks of aggravated breathlessness, in which he feared suffocation; these attacks would last a half-hour or more, and he would relapse into a short sleep to be similarly disturbed. When I saw this patient it was evening, and on the first day of his taking to bed. He was not orthopnoeic, but lay flat in bed; his respirations were deep, noisy, and periodic (Cheyne-Stokes type); he was drowsy, complained of severe headache, and great breathlessness. Yet the mucous membranes of this patient were as pink as those of a child; neither in the lips, tongue, ears, cheeks, or fingers, was there the faintest trace of cyanosis. Upon further examination the heart was found to be a little enlarged, the pulse was at the rate of 92 per minute, occasional extrasystoles interrupted its rhythm, and alternation in the force of the pulse beats was seen. There were no murmurs. The veins pulsated freely and seemed a little engorged, but the liver was not enlarged and there was no dropsy. The blood pressure was 200 mm. Hg. He was passing from 600 to 2,000 c.cm. of urine a day; sometimes a trace of albumin was present, and a few granular casts were found. Over the lungs a few rhonchi were audible.

I take this as a type case and emphasize the following features. The man presented some signs of a degenerate heart muscle, enlargement, and especially pulsus alternans; he presented signs of renal involvement, the urine flow was, as a rule, increased, casts were present, the blood pressure was very high. He had urgent dyspnoea, yet the blood was perfectly aërated. You may say that I am describing a case of so-called "uraemic" dyspnoea; I cannot disagree with you. This patient was one of a series specially investigated for me by my collaborators, Mr. Barcroft, Drs. Ryffel, Cotton, and Wolff. Mr. Barcroft found in him by special methods evidences of a diminished alkalinity of the blood sufficient to account for the dyspnoea and due, not to CO_2, but to non-volatile acids. Having studied a number of cases by these methods, which I will describe briefly later, we were able to isolate a group of symptoms which are specially associated with an altered blood reaction of the kind.

Special Clinical Associations of Relative Acidosis.

The most important feature of these cases is the breathlessness, varying in degree, as Mr. Barcroft has shown, with the reaction of the blood, being of the periodic type known as Cheyne-Stokes respiration, being accompanied when severe by conspicuous restlessness during the periods of hyperpnoea, and lastly becoming exaggerated by the slightest exercise. There is no reserve, the breath cannot be held, and forced breathing is followed by no apnoeic period. Oxygen affords little or no relief, though it alters the type of breathing. Secondly, there is evidence that the blood is well or moderately aërated; there is no cyanosis comparable with the dyspnoea. Thirdly, the dyspnoea is more severe towards evening and in the night, and sleep is broken by exaggerated attacks of breathlessness. Fourthly, the pulse-rate is increased (80–100), and especially towards evening. Fifthly, the temperature is subnormal.

These are almost constant clinical manifestations; but the picture may be modified in a variety of ways, and it is to these modifications that the chief difficulties in diagnosis and the confused pathology of the past are due. Imagine a patient with the symptoms which I have described and take him as a type; add to this symptom group the symptoms and signs of heart disease in its varying forms; add to it also a large number of unquestionable renal manifestations; add to it emphysema and the symptoms of cerebral arterial sclerosis, and you are able to construct all the different types in which this curious form of acidosis is found. The types are protean. Your power of diagnosing acidosis will depend on your ability to discriminate the underlying symptom group which I have detailed. Usually you will have no difficulty; the condition is an extremely common one, and urgent dyspnoea, where there is a want of equivalent cyanosis, is your first guide; really distressed breathing in elderly subjects, accompanied or not by cyanosis, is always open to suspicion; the presence of Cheyne-Stokes breathing, and especially the characteristic nocturnal attacks, are extremely valuable indications. The periodicity of the breathing is often inconspicuous or variable; it may consist merely of slight waxing and waning in the amplitude of the breathing, there may be no true apnoeic periods; it may be present only at night or at the patient's first admission; it is very often overlooked; I have heard its presence denied in patient after patient, and have found it either by immediate close examination or by repeated examination. It should be looked for especially when the patient is quiet or asleep; very small disturbances may abolish it; if you watch your patient when he is unaware that you are watching you may often detect it. But Cheyne-Stokes breathing may not be present; it may be absent in at least two types of case—(1) where the

relative acidity is slight, and (2) where moderate cyanosis is added to the picture, as it may be.*

The evening or nocturnal attacks may be of a few minutes' duration; they may last an hour or more; they give rise, when severe, to the most urgent distress, all the accessory muscles of respiration being called into action. The patient sits clutching a bed-rest or the arms of a chair, and literally gasps for air. The agony is often intense; he may become delirious.

Finally you have the pulse-rate and temperature chart to help you. But in regard to the first, this evidence is obscured where rapidity and irregularity of the ventricle are due to fibrillation of the auricle. And the temperature may not be subnormal, it may be at or above normal. A rise from a subnormal position to the normal in the absence of improved breathing is to be regarded in these patients as equivalent to a raised temperature in other patients.

Further Associations.

I have isolated the foregoing symptoms because they are what I regard as the essential symptoms. I now propose to consider the remaining symptoms and signs which are common accompaniments. There are first of all symptoms and signs of renal disease. The urine is increased in quantity and nocturnal micturition is common; it is of low specific gravity, and may or may not contain a trace or cloud of albumen; casts are usually seen in centrifugalized specimens, but may not be discovered. Severe headache, vomiting, twitching of the limbs, temporary aphasia or hemiplegia and convulsive attacks are not infrequent. Retinal changes, oedema of renal distribution† and haemorrhages have not been observed as yet. High systolic blood pressure (190 to 220) is very frequent, and the arteries are almost always tortuous or thickened. Wasting is very common, in fact the rule; anaemia of slight grade is also frequent, the red cells numbering three million and a few hundred thousand or more.‡ Inflammatory changes in the pleurae are often seen in severe cases; unilateral effusions are particularly prone to develop and often develop suddenly.

Equally important are the symptoms and signs of heart disease. The heart shows signs of enlargement; dilatation and hypertrophy may be very considerable. Often there are no murmurs, but gallop rhythm is heard at the apex. This is the type of case in which renal heart is customarily diagnosed. On the other hand, aortic regurgitation, mitral stenosis, or mitral regurgitation often accompany the intoxication, and I have seen aortic stenosis and aneurysm of the arch. In several cases of our series there was a history of rheumatic fever. The mechanism of the heart may be disturbed in any known way. Fibrillation of the auricle and alternation are the commonest forms of disturbance, but extrasystoles, heart-block, paroxysmal tachycardia have also been seen. Certain of these disturbances of rhythm mask or hide the acceleration of the normal heart rhythm. Anginal symptoms are not infrequent, and may be severe. Lastly, circulatory failure may show itself in venous engorgement, cyanosis, and dropsy.

The Influences of Venous Engorgement.

I have spoken of a type case in which urgent dyspnoea was unassociated with the slightest cyanosis, but this combination is rare, because practically all these patients have cardio-vascular trouble in greater or lesser degree. When, as is commonly the case, venous engorgement supervenes and the liver swells, the patient shows cyanosis, which may be slight, moderate, or deep, according to the degree of embarrassment. With the addition of stasis—and it is nearly always present in some degree—the patient early assumes the orthopnoeic position. The special cause of dyspnoea—the presence of non-volatile acids in the blood stream—has the cause of simple cardiac dyspnoea superadded to it—namely, a want of aëration of the blood. The circulatory embarrassment hides the underlying condition more or less completely, and the whole dyspnoea is, as a consequence, often assigned to the heart alone, or to the heart and lungs, because bronchitis, oedema of the bases, and pleural effusions may develop. The diagnosis is sometimes impossible for these reasons; a very careful comparison of the degree of dyspnoea and the degree of cyanosis is always called for. The nocturnal attacks and the subnormal temperature are the most valuable signs in the complicated cases; Cheyne-Stokes breathing also occurs in many of them, though in some where the cyanosis is more noticeable it may not be seen. The paroxysmal breathlessness may be replaced by persistent or urgent breathlessness under similar circumstances. The stasis also masks signs of renal involvement; the quantity of urine is diminished and falls below normal, it becomes of high colour, and contains excess of urates and urobilin; albumin and casts are then mistakenly attributed to renal congestion alone. The characters of the urine in the condition are therefore inconstant; I believe they are inconstant simply because stasis so often modifies them.

Contrast the patient I have already spoken of with the following:

A wasted man of 67 years who is propped in the orthopnoeic position. The facies are dark, the lips cyanosed; the ears, the tongue, and the fingers are more deeply cyanosed. The breathing is gasping and wheezy, and is heard distinctly over the whole ward. He is in great distress, the muscles of the shoulders tense, and the chest is moved rigidly. As he is watched, the distress passes, and he sinks back in a drowsy condition as the respirations fade away. He becomes apnoeic and for the moment is still, but the breathing soon starts again, and as it grows in amplitude the restiveness and distress return. He has been ill for several years; seriously ill for six months. When examined, the heart is found to be greatly enlarged, dilated, and hypertrophied; systolic murmurs are audible at the apex and aorta. The auricles are fibrillating, the pulse grossly irregular. The arterial tension is high and the vessels are thickened. The veins are engorged and pulsate freely. The liver is much enlarged and pulsatile. There is anasarca of the lower limbs and trunk. There are signs of ascites and small effusions into both pleurae. The urine is high-coloured and heavy; it is scanty and contains albumin, pus cells, and casts.

The history tells us of attacks of suffocation at night, and he still has them. The temperature stands at 96°.

This patient had a great excess of non-volatile acids in the blood, sufficient to account for most of his dyspnoea. He was cyanosed, and had abundant evidences of heart failure with pleural effusions and bronchitis. The renal signs were less conspicuous.§ The cause of the dyspnoea was the same as that in the first case I have described, but the clinical picture was profoundly modified by the addition of cardiac failure.

I might cite similar cases‖ or instance those in whom aortic disease, mitral stenosis, forms of heart irregularity other than auricular fibrillation or angina pectoris were prominent, or in whom Cheyne-Stokes breathing was never seen. Such cases are commonly relegated to the category of "cardiac asthma," because, having conspicuous signs of heart disease, they suffer from paroxysmal breathlessness, especially severe at night.

I might instance, on the other hand, those with simple cardiac enlargement and gallop rhythm, or those in whom persistent drowsiness, headache, vomiting, twitching, or actual convulsions were prominent features; or in whom a retention of urea was discovered; these cases are usually spoken of as "uraemic asthmatics." We find the same blood picture in association with all these symptoms and signs, and attribute the dyspnoea, or the greater part of it, to a single and constant cause—namely, a diminished alkalinity of the blood from the presence of non-volatile acids.

Morbid Anatomy.

A large percentage of our cases have come to *post-mortem* examination. The morbid anatomy is as equally varied as the symptomatology. Hypertrophy and dilatation of the heart is the rule, though it varies in degree; the heart and vessels may weigh anything from 15 to 25 ounces. Coronary arterial disease is almost constant; fatty change has been seen in several of our cases;¶ valve lesions of all kinds may be present. The kidneys have always shown some change; in a few they were of

* It will be remembered that Pembrey found that Cheyne-Stokes breathing is abolished when CO_2 is inhaled. Most of his cases were of the type now described. (*Proc. Physiol. Soc.*, February 24th, 1906.)

† Acidosis has since been found by Mr. Barcroft in a young man with all the symptoms of chronic parenchymatous nephritis, including universal oedema.

‡ A leucocytosis (13,000 to 19,000 per c cm.) is not uncommon; the increase is mainly in the polymorpho-neutrophile cells.

§ At the *post-mortem* examination advanced granular contracted kidneys were discovered.

‖ A number of cases are described in a recent article: Lewis, Ryffel, Wolf, Cotton, and Barcroft. (*Heart*, 1913, v, 45.)

¶ It was noted by Stokes in association with cases of a very similar type.

the advanced granular contracted or arterio-sclerotic type; more commonly they were large and showed diffuse fibrosis and lymphocytosis with changes in the medial and internal coats of the smaller vessels. General atherosclerosis of the larger vessels was usually discovered.

The Immediate Cause of the Dyspnoea.

The diminished alkalinity of the blood has been identified for us in these cases by Mr. Barcroft.* He exposes a sample of whipped and aërated blood to a definite pressure of oxygen, and finds that, according to the degree of its alkalinity, it absorbs more oxygen. The test of the reaction is the degree of saturation of the haemoglobin with oxygen when exposed to a definite pressure. The test is a delicate one; if the quantity of oxygen absorbed is known, the amount of acid which must be added to normal blood to produce a similar reaction may be calculated in percentage terms. If the same blood is exposed to oxygen, in the presence of CO_2 at pressures equivalent to those found in the alveolar air of the patient from whom such blood was taken, you have, according to the amount of oxygen absorbed, a measure of the reaction of the blood as it circulates in the patient. You gauge in this manner the total relative acidity (or hydrogen-ion-concentration) and this was found in our patients to give an accurate measure of the degree of breathlessness established in any given case. Not only so, but the results of this second test varied with the degree of breathlessness in the same case from time to time; so that when improvement in breathing was noted clinically the reaction of the reconstructed blood became more alkaline; or when the dyspnoea became more urgent, the blood was found to have greater acidity. Mr. Barcroft, working at Cambridge, was almost as well aware of changes in the degree of breathlessness of our patients in this hospital, as we were here, and by the simple examination of blood and alveolar air samples sent to him.

Any increase in the acidity of the blood increases the depth and rate of respiration. This fact has been abundantly proved; and it is a matter of indifference if the excess of acid is volatile, as it is when CO_2 is breathed, or whether it is non-volatile. There are many notable examples of the latter. I may instance the experiments of Leymann,[1] who introduced small quantities of phosphoric and other acids into the circulation. The injection of acids produces hyperpnoea, of alkalies apnoea. The dyspnoea of violent exercise is due to accumulated lactic acid.[2] Diabetic asthma is the result of diacetic and beta-oxybutyric acids. The presence of excess of non-volatile acid stimulates the respiratory centre, and hyperpnoea results; the hyperpnoea washes out CO_2, it increases the pressure of oxygen in the alveoli, and in this way the body attempts to accommodate itself to the altered conditions; but the accommodation is imperfect, and the reserve is decreased or abolished. The fall in the pressure of CO_2 in the alveolar air produced in this fashion is noteworthy; it serves as an index of altered respiratory metabolism, and suggests the presence of acidosis. The alveolar CO_2 may be reduced in exercise (Cook and Pembrey); it is diminished in diabetes[3]; it was reduced in our cases where it was estimated. It was a diminution of alveolar CO_2 pressure and a lowering of the respiratory quotient which led Straub and Schlayer[4] recently to suggest acidosis as the cause of breathlessness in cases they term uraemic; the cases they cite are certainly of the same group which I have described to you. As to the nature of the acid in the cases investigated we have no certain knowledge. In two moribund cases an excess of lactic acid was found by Dr. Ryffel, but as a rule it could not be identified. A similar acidity is developed by normal subjects at high altitudes, and the symptoms accompanying this relative acidity are similar to those which our patients exhibit; Cheyne-Stokes breathing and hyperpnoea, intensified at night, are common phenomena in those who climb to such heights as ten or fifteen thousand feet. Sufficient for the time being that relative acidosis is present, and that it is the cause of dyspnoea in a very large number of the patients of our wards. Moreover, it seems possible, if not probable, that in many of these cases it is also responsible for the increased pulse frequency and loss of cardiac tone, expressed as dilatation.

* For further details of the method the reader is referred to our full paper, *Heart*, 1913, v, 45.

CARDIAC AND RENAL ASTHMA.

We distinguish between "cardiac" and "renal" asthma to-day in one of two ways. First, by studying the associated symptoms; if there are other "uraemic" manifestations, for instance, the curious ethereal breath, twitchings of the muscles, drowsiness or vomiting, a renal asthma is diagnosed. Each of these symptoms may occur in combination with the special type of breathlessness which I have described, namely, the breathlessness associated with acidosis; on the other hand, each and all may be absent in cases of the same group. These symptoms, therefore, are simple associations; they have not the same underlying cause as the asthma. The presence of such symptoms, apart from suggesting that the kidneys are not fulfilling their functions in a given case, does not materially help in elucidating the cause of the asthma; on the other hand, the cardiac symptoms may predominate. Valvular disease, signs of venous engorgement, dropsy, etc., may command our attention. In these cases cardiac asthma is diagnosed.

Secondly, we attempt to distinguish the two types of dyspnoea after death. When the body is examined the conspicuous lesion is found in the kidney, or it is found in the heart; the morbid anatomist points to one or other organ as the seat of the chief mischief, and accordingly the dyspnoea is relegated to the "renal" or "cardiac" category. The answer of the dead body is regarded as decisive; it is probably the least decisive answer we can obtain, and for the reason that no man can say at the present time, from the appearance of heart or of kidney, whether asthma was a clinical feature of the case or not. Neither can the presence or absence of this symptom be judged to-day from the closest inspection of these organs with the microscope. Nothing is clearer than the frequent discrepancy between the degree of functional impairment in these organs and the amount of structural change in them.†

We come to this standpoint—that the clinical or anatomical distinction between cardiac and renal asthma is no certain one.‡ Asthma occurring in patients who show on the one hand prominent cardiac lesions, on the other hand prominent renal lesions, may or may not be due to a single cause.

I would lay especial emphasis upon the failure of morbid anatomy materially to help us; changes of structure may have directed our search; it has not solved, and it never could solve, the problem as a whole. Breathlessness is a symptom during life; the body is examined after it has passed through the process of death, which conceals and eventually buries the truth. We seek the cause of hurried breathing, not in the subject of it, but in his remains, which are incapable of respiration. The chemistry of the dead is not the chemistry of the living. The problem of asthma is to be solved at the time of its occurrence, and it is first a problem of chemistry. While abnormalities of structure fail to indicate the cause, chemical pathology immediately directs us to it. The dyspnoea results, as we have seen, from diminished alkalinity of the blood; appropriate tests applied to the blood of these patients tell us whether these patients are sufferers from dyspnoea, they also reveal the degree of dyspnoea in a very accurate manner.

The object of these remarks is twofold. They are intended to emphasize study in the wards as opposed to that of the deadhouse. They are also made to persuade you that a classification of dyspnoea, based upon structural

† English clinicians, as opposed to those of the French school, have too long neglected the chemical side of renal disease in favour of the anatomical.

‡ I have searched a number of past writings for definitions of "cardiac" and "renal" asthma and for distinctions between the two, but can find no satisfaction in the accounts, when they are regarded from the standpoint of pathology. The terms are used loosely, and in varying senses. The French writers, and Huchard especially, alone seem to have been widely awake to the special meaning of paroxysmal breathlessness associated with Cheyne-Stokes breathing and other characteristic symptoms. Huchard (*Traité clinique des maladies du Coeur*, etc., Paris, 1899, Tome i) gives a perfectly clear account of cases of the same kind as those here described, emphasizing the form of dyspnoea as separate and distinct from simple cardiac dyspnoea, under the term "Dyspnée toxi-alimentaire"; he clearly recognizes that it may be combined with varying degrees of cardiac failure, and that under such circumstances the chief cause of breathlessness is often overlooked. He attributed the dyspnoea to relative impermeability of the kidneys, which incompletely eliminate toxins developed in the alimentary tract. His reasons for this hypothesis are found chiefly in the effects of diet. He thought that the term "aortic asthma" should be replaced by "toxic asthma." His account of asthma is most instructive.

defects, is incomplete and often irrational. I cannot agree with the further use of the terms "uraemic" or "cardiac" asthma, even as terms of convenience; we should speak and think of an asthma associated with relative acidity of the blood, or, more briefly, an asthma of acidosis; we should separate our types of dyspnoea according to the nature of the stimulus which produces it; subdividing those of acid origin according to the type of acid which is in excess, and leaving those in which the same type of acidosis is found, whether such acids can be identified or not, in a single and undivided group, provisionally at all events. Proceeding in this manner we shall immediately separate dyspnoea due to volatile acid (CO_2) and non-volatile acid. In the last group we shall isolate the dyspnoea of diabetes; it results from intoxication by the acids diacetic and β-oxybutyric; and if these acids are in excess in diabetes only, we may still be content with the term "diabetic asthma."* We shall isolate the dyspnoea of continued exercise, it is produced by excess of lactic acid; and we shall place in a provisional and single group asthma associated with renal and cardiac disease, and may have to add to these a form of dyspnoea encountered at high altitudes. Taking the last group we may, sooner or later, come to regard the asthma in each case as the same, and due to a single error in metabolism, renal or otherwise; we may, on the other hand, be forced to place them separately; but at present, while asthmas which occur under these three sets of circumstances (renal, cardiac, high altitude) have much in common, they should be retained in a single class.

My reason for suggesting a classification with this basis is not a purely theoretical one; it has considerable practical consequences. For one and the same patient may, as we have seen, have dyspnoea from combined causes, and these causes may vary in intensity, relative to each other, in different patients and in the same patient from time to time; it is important that the cause or causes of hurried breathing should be recognized in a given case, for each has its own significance, and each calls for separate and appropriate remedies.

Progress of the Patients.

The further history of these patients in whom relative acidosis is discovered is variable. The majority are the subjects of disease which speedily terminates life. In many there is progressive emaciation; the constant distress and want of sleep rapidly fatigue and weaken the body, and exhaustion is profound at the end. In others, signs of cardiac failure are more prominent; they become more and more waterlogged and cyanosed, breathing becomes still more difficult, and the heart dilates; death appears to be due to cardiac failure. In others death is ushered in by cerebral attacks, and the patients die comatose or hemiplegic. As Drs. Ryffel, Cotton, and Wolff have shown, the picture may become complicated in the terminal phases by a retention of urea and of lactic acid. Inflammatory exudates are often developed; they may be limited to a single pleura or may affect both cavities, the pericardium and the peritoneum. When such appear, the temperature often rises to normal or above it before death. Draining the pleura is often ineffective, reaccumulation is rapid.

In some few patients the progress towards recovery, especially in those in whom signs of cardiac stasis are few, takes place. The dyspnoea vanishes, or is present only on exertion. Permanent and complete recovery is not known; relapses are frequent, and sooner or later the disease is fatal.

I do not propose to deal with the subject of treatment at all fully; it is equally variable with the symptomatology; usually it combines the treatment of renal and cardiac disease. I shall deal with special points only. For some of the patients a good deal can be done by treatment. Rest alone may be attended by considerable improvement. The dietary, as Huchard has stated, is important. Many of these patients are aware beforehand that a milk and vegetable dietary is the most suitable for them. A relatively salt-free diet seems to cause improvement in some instances. In patients who have dropsy the outlook is always serious, but some respond to diuretics, and those who have fibrillation of the auricles may be greatly benefited by digitalis. Drainage of the legs should be carried out only with the strictest precaution. The incisions are prone to suppurate. Oxygen, even though administered in concentrated form, usually has little influence upon the distress of breathing. When the distress is great morphine alone affords relief. I have seen considerable relief follow free venesection, the breathing becoming quieter and sleep being induced.

The clinical signs sometimes show improvement on the cardiac side alone, so that cyanosis vanishes, engorgement and dropsy disappear, while the breathing still remains hurried, and bodily exercise remains difficult or impossible, because non-volatile acids still retain the blood in a state of diminished alkalinity.

I have given large doses of carbonates to several patients in the hope of altering the blood reaction; a difficulty in rendering the urine alkaline is often experienced, and although improvement has been seen in some patients, I cannot as yet speak of the remedy very hopefully. In the main our remedies are at present palliative, and temporary alleviation is alone anticipated.

The Origin of the Acidosis.

Patients who suffer from the acidosis I have described have prominent lesions in two chief organs, the heart and the kidneys. In none of our cases were either of these organs found healthy after death. We seek the cause of the acidosis in defects of the circulation or in defects of the kidneys. That it is not due to deficient circulation is, I think, evident, for the degree of acidosis is not parallel to the circulatory defect. Is it the result of defective elimination, or does it come from an altered metabolism secondary to renal disease? To these and similar questions no certain answer can be returned; though we suspect that, as in one renal patient urea may be retained, and as in another chlorides may be retained, in a third type there is an alteration in the relative elimination of acids and bases. But whether this is the case or not is for the future to decide.

References.

[1] *Arch. f. d. ges. Physiol.*, 1888, xlii, 284. [2] Geppert and Zuntz, *Arch. f. d. ges. Physiol.*, 1888, xlii, 189; Barcroft, Peters, Roberts and Ryffel, *Journ. of Physiol.*, xlv; Ryffel, *Journ. of Physiol.*, xxxix, xxxi; Cook and Pembrey, *Journ. of Physiol.*; *Journ. of Physiol.*, xxxvii, lxvii. [3] Beddard, Pembrey and Spriggs, *Journ. of Physiol.*, xxxvii, xxxix, etc. [4] *Münch. med. Woch.*, 1912, xi.

* But if they also occur in starvation, we should return to a chemical terminology, defining the asthma as one resulting from a given error of metabolism.

An Address

ON THE

CLINICAL AND BACTERIOLOGICAL ASPECTS OF LEPROSY.

DELIVERED AT THE ROYAL SOCIETY OF MEDICINE,

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Leprosy.

On considering leprosy from a nosological point of view we are struck by its long incubation, its slow and chronic course, and the terrible mutilations and disfigurement it is capable of producing without appreciably shortening the life of its victims. Its general infectivity, or, more correctly, contagiousness, appears to vary somewhat in different climates, because, though nowadays the disease, estimated by the number of cases, is practically confined to tropical and subtropical countries, still it is a universal disease occurring from north to south all over the inhabited world. In other words, it appears to have spread or persisted under some conditions and died out under others, for we know that it was extremely prevalent in Europe in the Middle Ages.

The Pathology of Leprosy.

Its Contagious Nature.

It is not possible, from a scientific point of view, to deny that leprosy is contagious, even though we may not quite exactly know in which way the disease is transmitted from one individual to another. Knowledge of its

contagiousness is founded on the following substantiated observations:

1. That it is a disease due to a definite micro-organism.
2. That in Northern Germany, where the disease had been reintroduced from Russia in modern times, the infection was found to have spread concentrically from the first imported cases.
3. That the overwhelming majority of cases originate in countries where leprosy is relatively common.
4. That in the rare cases in which the disease has been contracted in countries where leprosy is not indigenous, such as England, Holland, and Southern Germany, we are able in every case to prove the more or less intimate contact with lepers who in their turn came to these districts after a more or less prolonged stay in a leprosy-ridden country.
5. That in countries where leprosy is relatively rare the disease is found to be bound to definite foci or families. This has been observed in the Alpes Maritimes, on the Riviera, and in the Valais (Switzerland).
6. That the countries which have carried out universal segregation have been rewarded by a gradual and constant diminution of the disease.
7. That where segregation has been abandoned or loosely carried out the scourge has attacked an ever-increasing number of individuals.

Arguments against its Contagiousness.

The grounds on which the contagiousness is denied are, I believe, the following:

It is said that medical men and attendants never contract the disease in leper asylums. This statement is not quite correct. Infection in these circumstances is not frequent, but several cases can be brought forward showing that attendants and medical men do contract the disease. In this country the infection of Sir George Turner has become public, but missionaries, nurses, attendants, and medical men are still living in England, and elsewhere, who have contracted the disease under similar circumstances, but whose cases are only known to those taking a definite interest in the disease. It should not be forgotten that on somewhat similar grounds the infectivity of tuberculosis has been denied, the deduction being based on statistics showing the low ratio of marital infection.

It is alleged also that the disease cannot be transmitted to animals, and inoculation experiments on human beings have failed. This also is not quite correct. The first part of this argument would have allowed us fifteen years ago to deny the contagiousness of syphilis. As a matter of fact, leprosy appears certainly to be transmissible to laboratory animals such as the rabbit or rat; the lesions in the first instance are very often strictly localized, and fail to develop at all in a very great proportion of experiments. The whole question is, however, still under discussion, but I am demonstrating sections under the microscope from which you may be able to form your own opinion.

As to the inoculations which Danielsson, Profeta, Cagnina, and Bargilli carried out on themselves and others, the results, it is true, were negative, but in view of the knowledge acquired of the bionomics of the leprosy micro-organism they have only proved that experimental inoculation with small quantities of leprous material is incapable of producing the disease in the human being in every case. In Arning's well-known case of the convict Keanu, who was pardoned on the condition of allowing himself to be inoculated with leprosy, the disease did develop, but the case is somewhat spoilt by the fact that the man had lepers among his relatives, and was in contact with them before and after the inoculation.

Leprosy is a disease with consequences too far-reaching to make its inoculation morally justifiable, even on willing subjects. Therefore we must await the results of further animal experiments, which should confirm previous successful results.

Another argument often brought forward by non-contagionists is that leprosy disappeared in the Middle Ages from England, France, Germany, and other countries, though strict measures of segregation were not resorted to.

It appears to me, however, that the measures adopted to prevent the spread of the disease were extremely severe. Lepers were not allowed into churches or market-places; had to carry a distinctive dress; had to make their presence known by a bell or clapper—in fact, the intimate contact between the healthy and the diseased, which gives rise to the most favourable conditions for transmission, was most radically avoided. I also believe that plague, directly and indirectly, swept away a great proportion of the leper population, as they were feeble, and, during times of epidemics and commotion, would receive no alms. This observation has been confirmed to a certain extent in India in modern times.

Family Statistics.

Figures bearing on the contagiousness of leprosy are available from Norway and Japan, and both seem to point the same moral.

Kitasato's statistics from Japan show that children of lepers become leprous in a proportion of only 7.05 per cent. of the total. Matrimonial infection was proved in 3.8 per cent. of cases, whilst persons living under the same roof showed a proportion of only 2.7 per cent. Brothers and sisters infect each other in a ratio of 4.2 per cent. These figures may need correcting according to the latest statistical methods, but they roughly correspond to the experience gained in Norway. The statistics of Sand and Lies for that country differ somewhat, but show that the children of a leprous mother are more frequently infected than those whose father alone is diseased. This indicates that the more intimate contact between mother and child leads to acquisition of the scourge in a greater percentage of exposed persons.

Sand's statistics for Norway show that in 357 married couples in which the father alone was a leper, 1,241 children were born, and 63 of these children (4.9 per cent.) became lepers. In 138 other married couples observed, the mother only was a leper; of 533 children born of these unions, 56 (10.5 per cent.) developed leprosy. In 17 couples both parents were diseased, and of the 63 children born to them 8 (12.7 per cent.) became infected.

Lies's figures from south-western Norway give somewhat similar results; 230 married couples in which the father only was a leper had 769 children, and 79 (10.2 per cent.) of these children contracted the disease. In 223 married couples the mother only was leprous, and of the 648 children born, 106 (16.36 per cent.) became lepers. In 28 instances both parents were lepers; out of 79 children, 29 fell victims to leprosy—that is, 39.19 per cent.

All these figures show, however, that leprosy is relatively slightly contagious only. In certain circumstances, however, the disease has been known to be acquired with great ease after a very short stay (a day or two) in leprosy-ridden areas, though it may have developed or been noticed as late as twenty or more years after contagion.

In view of these facts it is absolutely useless to try and deduce anything from a small series of experiments, or experiments in which the observation has not been sufficiently prolonged. The same observation applies to the bacteriology of the disease; a few attempts at cultivation are bound to be futile, and even hundreds of tubes and dozens of attempts may result in perfectly negative results.

Mode of Transmission.

The statistics I have quoted seem to show so clearly that contagion or infection through immediate contact is the usual mode of transmission that it appears rather far-fetched to seek an insect carrier of the scourge.

As a matter of fact, all experiments to prove this mode of dissemination have so far failed, though it appears quite probable that the common house-fly can suck up the germs of the disease from open sores, and carry them about for several days.

The horrid sight of flies swarming and hovering round purulent sores and round the nostrils of leprous beggars is well known to the traveller in Eastern countries.

The theory of the hereditary nature of leprosy has also been refuted in the course of time by the fact that the children of leprous parents, if taken away at an early age, develop the disease in very rare instances only.

The possibility that in a minimum proportion of cases the lepra bacterium may pass the placenta and infect the fetus cannot be absolutely denied, but cases of congenital leprosy appear to be unknown, though in several instances

children have shown definite symptoms of the complaint before the age of 5.

The modern medical eye looks, therefore, upon leprosy as a disease which is definitely contagious, though under proper sanitary conditions to a very slight degree. In situations where hygienic precautions are defective and the contact between the diseased and the healthy is unnecessarily immediate—where, for instance, a leper is obliged to sleep in the same bed with other members of the family—and personal cleanliness is apt to be in abeyance, the danger of contagion is certainly present to a varying extent.

We know that at the present moment about 25 to 50 lepers, or perhaps more, are living in England, and yet of these only one has acquired the disease in the United Kingdom. The simple precautions these unfortunates are able to take to keep themselves separated from their families have been sufficient to prevent contagion.

In India, on the other hand, the last census appears to show an increase of lepers from 100,000 to 110,000 in ten years.

In Basutoland the principal medical officer counted 300 lepers twenty-five years ago. An official report was made asking the Government to enforce segregation, as otherwise an increase to double that number was to be expected within twenty years. For financial and other reasons this advice was not acted upon. Last year a census showed 800 to 900 lepers in Basutoland, so that the principal medical officer does not appear to have gone far wrong in his prophetical estimate.

THE TREATMENT OF LEPROSY.

Nearly every imaginable drug has been tried, and a great number are still under experiment in the hope of discovering a cure for leprosy; but we have yet to find a specific and sure method of treatment.

The present position can, however, be summed up by saying that even the most useful therapeutic agent requires the help of an early diagnosis of the disease and proper hygienic conditions; but that at no moment has the therapeutic outlook been so hopeful as at the present moment.

In its initial stages leprosy affects the general well-being and appearance of an individual to such a slight extent that any therapeutic effort which succeeded in arresting the disease in its early stages in a fair proportion of cases would practically amount to a cure.

Spontaneous remissions of the disease and spontaneous apparent "cures" occur, however, in a small proportion of lepers, and may last for several years, in some instances as long as fifteen years or more, but afterwards the disease may again become virulent and rapidly carry its victim to the grave. Therefore any drug or method of treatment must stand the test of time, five years or more, and be applied to a sufficient number of patients.

Without taking into consideration these important initial factors it is absolutely irresponsible to speak of cure in a disease so chronic, slow, and intractable as leprosy is known to be.

A review of all therapeutic attempts, many of them very sketchy and saltatory, would fill a volume by itself. I may, however, be allowed to give the results of the experience at Robben Island and in South Africa generally. For all advanced nodular stages Chaulmoogra oil, or, better, its refined constituent "antileprol," injected intramuscularly in doses of 3 to 5 c.cm. is still the best palliative I know. The injections should be repeated every three days, and the course should last five months or more if the patient can stand it, because at times the injections may become very painful. Chaulmoogra oil and antileprol can also be given internally in small capsules, and for this mode of treatment antileprol is decidedly preferable, as it does not cause the gastric disturbances produced by the unrefined oil. Doses varying between 15 minims and ten times that quantity can be taken daily.

Cases in the early macular stage appear to respond better to other forms of treatment. A cultural extract has been prepared from the micro-organism of leprosy isolated by Kedrowsky on lines similar to those used in the preparation of Koch's *alt-tuberkulin*. It contains, accordingly, the water-soluble toxic constituents of the bacillus, which, however, in the case of Hansen's germ, are very feeble indeed, so that much higher concentrations have to be injected than is the case in the analogous treatment of tuberculosis by tuberculin. Dr. MacLeod, of Charing Cross Hospital, and Dr. Davies, Resident Medical Officer of the Pretoria Asylum, have made use of this substance on single selected cases. The result in both instances was very satisfactory. The maculae, or spots, slowly and surely faded away. [This was illustrated by lantern slides of photographs.]

Dr. MacLeod's case has now been under treatment over a year, and has improved to such an extent that the disease is no longer diagnosable. I am authorized to say that other therapeutic efforts failed to bring about any change for the better, and that the patient has now been observed for over a year and a half without any recurrence being observed. On the contrary, there has been subjective improvement, inasmuch as muscular pains, previously present in the affected arm, have disappeared.

Dr. Sydney Davies's patient, a girl aged 8½, was covered with dusky red patches, which were to be seen all over her body. They faded away during the course of treatment, which occupied three months, and had not reappeared during the following ten months. Similar results were obtained at Robben Island. [This was shown by lantern slides.]

I should like, however, to state clearly that this method of treatment does not appear to be of real advantage in advanced nodular cases. The injection of 1 or 2 c.cm. of the cultural extract causes a rise in temperature accompanied by the appearance of bacilli in the blood. This may possibly lead to dissemination of the germs of the disease; but if the individual affected is young and otherwise healthy and the leprotic symptoms not marked, a course of injections, beginning with 1 c.cm. hypodermically every three days, may be distinctly beneficial. The treatment should be continued for some time even after the maculae have disappeared.

The surgical treatment of leprosy requires most careful and constant attention. Fingers, toes, hands, and feet frequently become septic, and prompt surgical intervention can work marvels. Eye complaints, which are exceedingly frequent among lepers, are to a certain extent amenable to operative procedures, but relapses often follow even after the most skilful intervention.

PREVENTIVE MEASURES.

Having shown that leprosy is but slightly contagious if proper sanitary precautions are taken, and that any form of treatment which can be applied with any hope of success must be made use of in the very early stages of the disease, it may seem inconsequent to follow with the statement that only by a universal system of segregation can it be hoped to cope with the spread of the disease successfully and promptly.

The Americans in the Philippines succeeded by an energetic segregation of all cases in reducing the new admissions by 90 per cent. In South Africa, where in some districts, owing to financial considerations, only about one-half of the leper population is segregated, the rate of admission has remained constant for the last ten years. The Leprosy Repression Act in the Cape Colony was extremely severe, but owing to its very severity it could not be carried out in its entirety.

Opponents of segregation consider that it is cruel to separate the lepers from their family and friends. Two facts, however, are overlooked. One is that when an individual develops leprosy in a severe form his friends soon abandon him; and that consideration of the feelings of one may mean the misery of many, because one single leper may give rise to several. In a case observed in Northern Germany one girl directly and indirectly infected twenty-eight people.

It is only in properly constructed and conducted asylums that lepers can be taken care of satisfactorily and prevented from infecting their surroundings. If in the course of time early cases, and a certain proportion of the more advanced, can be favourably influenced by treatment, or even if the present results stand the test of time, there will be ample reason for trying to get rid of the scourge by universal registration and segregation—measures which ensure also proper treatment and care.

I quite admit that tuberculosis and syphilis present two problems which are equally if not more pressing. But we are not aware that consumption can be stemmed by segregation, and syphilis requires quite other measures.

Leprosy is so far-reaching in its social results, for the individual affected is cut off to such an extent from his fellow beings as to render his earning a livelihood very precarious, that whether we look at the matter from the standpoint of humanity or from that of sound policy, it is seen to be the duty of every Government to prevent its further spread.

It does not seem to have been sufficiently understood that all measures of preventive medicine which are based on sound scientific principles are excellent business propositions. I believe that the money invested in the study of Malta fever, now that the cause has been found, is saving the Government yearly a sum which would be sufficient to pay a dividend of 100 per cent. or more.

Such examples could easily be multiplied; one which lately came under my notice in Russia deserves mention here. Relapsing fever in Moscow alone attacked about 1,500 to 3,000 individuals each winter. Each patient remained in hospital from three to five weeks. Since the invention of salvarsan, which is a wonderful specific for similar diseases of the blood, the stay has been shortened to five days or a week. The resulting saving is about 30,000 to 50,000 roubles (£3,000 to £5,000) a year!

The sanitation of Khartoum, which owes so much to the work of Dr. Andrew Balfour, lately Director of the Wellcome Laboratories at the Gordon College, has also made itself pay over and over again in hard cash by the resulting influx of visitors and saving in hospital expenses for inhabitants and officials.

How are these comforting examples applicable to the problem of leprosy in the British Empire? By a systematic and persevering attempt to get rid of the disease by instituting settlements for the voluntary segregation of the worst cases, where the numbers are too great to be dealt with at one time, as is the case in India; and by a system of universal segregation in properly conducted asylums in those colonies and dependencies where relatively small numbers only are to be accounted for. Unfortunately, in some countries the principle "out of sight out of mind" is still applied to the leper asylums, and money spent on this principle is almost wasted. It should, however, be clearly understood that every system of segregation needs the co-operation of the lepers themselves, and this can only be obtained by paying the asylum staffs proportionately and adequately, and securing proper medical attendance.

The experience of other countries shows us that such a course would lead to the gradual extinction of leprosy, a disease which has now been known for so long a time that its survival should no longer be tolerated.

REMARKS ON ACUTE PANCREATITIS.

WITH NOTES OF SEVEN CASES.

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JUDGING from the literature on acute pancreatitis, one would imagine this condition, although very serious, to be one in which, with surgical intervention, a cure may be expected in about 40 per cent. of the cases.[1]

We have recently had under observation 6 cases of this condition, all of which terminated fatally; 4 of these were treated by operation and 2 died undiagnosed. Although we are aware that the number of cases is small, our impression, gained from a study of them, is that the condition is more serious than one would be led to suppose by the cases already published. We may have been unfortunate in having to deal with a specially virulent set of cases, but we cannot help thinking that, as a rule, unsuccessful results are not published, and that this mitigates against a proper idea of the great gravity of the condition.

CASE I.

A male, aged 40, was admitted to the Norfolk and Norwich Hospital on December 22nd, 1909, with the history that the illness started suddenly on December 20th with acute pain in the abdomen and vomiting. The pain continued severe and the vomiting became profuse. There was a history of previous attacks of biliary colic.

Operation.

On admission the abdomen was tender and rigid. No distension; no dullness on percussion. General condition very bad, skin cold and clammy. Operation two hours after admission—supra-umbilical laparotomy. Pancreas found hard, enlarged, sloughing in places, and beads of pus. Tubes inserted after incising the gland above the stomach and below. A few glistening white patches of fat necrosis seen in transverse mesocolon; none in omentum. The patient died twelve hours after operation.

Necropsy.

Closed wound above umbilicus, middle line, 5 in. in length, and an open wound 1 in. in length below the umbilicus. General peritonitis, lymph being found on the peritoneum. Fat necrosis in the transverse mesocolon. Three gall stones in the common bile duct, the gall bladder being full of stones. The tail of the pancreas quite necrotic, the head and body being of a dark red colour, swollen and hard.

Microscopical Examination.—The architecture of the pancreatic lobules is well marked. In some the cells are loose, breaking away from each other and the basement membrane; others are completely necrotic; in others abscess formation is taking place in the middle of a lobule already necrotic; others again have become abscess cavities. Extensive haemorrhage has taken place, mostly intralobular. The ducts in most cases show little change, but those in the centre of the larger necrotic areas are necrotic as well; in these the cell outlines have quite disappeared. Areas of fat necrosis are abundant. The islands of Langerhans are not to be distinguished in the necrotic areas.

CASE II.

A male, aged 40, was admitted to the hospital at 8.45 p.m. on August 27th, 1910. The illness began on the night of August 24th with sudden pain on the right side of the abdomen and vomiting; the latter became constant and profuse. On admission the patient was in a very collapsed condition; abdomen rigid and distended, dullness over pubes extending into right loin.

Operation.

At 10 p.m. on August 27th anaesthesia was induced with a mixture of ether and chloroform. The stomach was washed out preliminary to the operation, and a quantity of filthy brown fluid evacuated. Median subumbilical laparotomy performed; reddish dirty fluid found in the pelvis; small intestine very distended and dark red; circular, glistening white areas of fat necrosis seen in mesentery, but none in the omentum. The patient's condition was so bad that no attempt could be made to explore the pancreas, and he died from failure of respiration while the wound was being closed.

Necropsy.

A little reddish dirty fluid was found in the abdomen and fat necrosis in the mesentery. The pancreas was found firm and swollen, and appeared to be full of haemorrhagic effusion. The liver was somewhat enlarged and the gall bladder was distended, several stones being present, but the ducts were all patent. Nothing else abnormal was found, except old pleural adhesions on the right side.

Microscopical Examination.—The lobules in places appear normal, but most of them are in a condition of early necrosis, the cells being dislocated from their normal positions, and some parts have become quite necrotic. There is some inflammatory reaction, with haemorrhage around the pancreas. There are also areas of fat necrosis within the substance of the gland. The islands of Langerhans have suffered less than the rest of the organ.

CASE III.

A female, aged 51, was admitted to the hospital on November 19th, 1910. The illness began twenty-four hours before admission with sudden violent pain in the abdomen. History of "indigestion" for over a year, with two attacks of haematemesis. On admission the patient was in great pain, vomiting frequently. Abdomen rigid and tender, especially in the upper part; slight dullness above pubes. Very collapsed; no pulse to be felt at the wrist. Dr. Long and Dr. Cleveland saw the patient with one of us, and although a definite diagnosis was not made, it was obvious that an operation held out the best chance of life. At their suggestion the patient's limbs were firmly bandaged and two pints of saline and some pituitary extract were administered prior to the operation.

Operation.

Suprapubic laparotomy was performed. Dirty blood-stained fluid was found in the pelvis, and the omentum showed obvious patches of fat necrosis. The abdomen was washed out with saline, an incision made in the left loin, and a tube passed through to the tail of the pancreas, which was felt to be hard and enlarged.

November 20th. Patient comfortable; no pain; pulse, however, not perceptible. A quantity of dirty fluid draining through the tube.

November 21st. Pulse perceptible.

November 22nd. Patient better, pulse stronger, respirations 40, temperature subnormal.

The improvement did not continue after the 23rd, and the patient died on the 28th.

Necropsy.

Lesser sac of peritoneum full of dirty blood-stained fluid; fat necrosis well marked in omentum, mesentery, and the fat under the parietal peritoneum; two gall stones in the gall bladder, the duct not obstructed; the pancreas greatly swollen, and appeared haemorrhagic; stomach dilated, a small erosion near the ampulla of Vater.

Microscopical Examination.—The gland lobules show the changes of early necrosis, the ducts and islands of Langerhans take part in the same change. Areas of fat necrosis are abundant.

CASE IV.

A male, aged 34, was seized with sudden pain in the abdomen and sickness on September 9th, 1911. He was seen by Dr. Aldred of Wroxham, who sent him to the Norfolk and Norwich Hospital on the 11th. On admission his abdomen was uniformly distended, and there was resistance in the left loin. There was no collapse.

Operation.

An enema was given with slight result, but as the pulse-rate was increasing operation was decided upon. Thirty-six hours after the onset of the attack laparotomy was performed through the left rectus, above the umbilicus and extending 1 in. below. The peritoneal cavity was found to contain dirty-red fluid, and there were obvious patches of fat necrosis scattered all over the omentum. An opening was made through the great omentum just below the stomach with blunt forceps. The pancreas, which was much swollen and very tense, was incised with forceps and a drainage tube and gauze wick passed down. The gall bladder was distended but no stones could be felt.

After-History.

The day after the operation the patient was better, slightly jaundiced. The wound was discharging profusely. The improvement was maintained until September 17th (sixth day after operation), when the pulse began to get quicker and there was increased resistance in the left loin. An incision was made under eucaine in the left loin and a little dirty fluid evacuated and a drainage tube inserted.

On the 20th the laparotomy wound was gaping owing to digestion from the discharge, and silk sutures were inserted.

The patient gradually got weaker and died from exhaustion on September 27th—that is, sixteen days after operation.

Necropsy.

Well-nourished man with a large gaping wound in his abdomen. A little clear fluid found behind the omentum. All the abdominal fat thickly studded with fat necrosis. Above the transverse colon a track leads down to the pancreas. At the bottom of this track is a mass of necrotic tissue and pus. The head of the pancreas appeared to be normal, but the body and tail were absolutely necrotic, the whole organ floating free. The gall bladder contained no stones, but was firmly adherent to the small intestine. There was no stone found in any of the ducts.

Microscopical section of the head of the pancreas showed that it was in a condition of early necrosis with a very little haemorrhage into the substance of the gland. The islands of Langerhans were normal. Large areas of fat necrosis were present. The tail of the organ was found on section to be absolutely necrotic.

CASE V.

A woman, aged 48, said to have suffered from ulcerated stomach three and a half years before, and since then to have enjoyed good health, complained of abdominal pain on the evening of September 26th, 1911. The next morning she felt better, and did not consider it necessary to see a doctor. The husband left home at 7.30 a.m. for work, and, returning at 6.30 p.m., he found her dead, lying face downwards on the floor. A chair that he had placed beside the bed was knocked over, and there was dried vomit found on and by the bed.

Necropsy.

On opening the body fat necrosis was found to be present in the subperitoneal fat as well as in the omentum. The pancreas was found surrounded by effused blood and was hard and swollen; on section it was seen to be full of effused blood. The gall bladder contained four gall stones.

Microscopical section showed that the organ was completely necrotic, although the architecture of the gland could still be made out. There was a large amount of interstitial haemorrhage and many areas of fat necrosis. There were no inflammatory cells present.

CASE VI.

A man, aged 54, who had never had any serious illness, but had suffered from occasional vague abdominal pains for ten or twelve years, consulted Dr. Starling on December 26th, 1910, who treated him for indigestion. He improved steadily up to January 14th, 1911, when he had an attack of pain in the abdomen, which returned early in the morning of January 15th. When seen at 8.30 a.m. he was obviously very ill, face ashy colour, nose cyanosed, pulse 90 and weak, anxious drawn expression, he had vomited once. He rapidly got worse and died at 7.45 p.m. that day.

Necropsy.

A little dirty fluid was found in the peritoneal cavity. There was some haemorrhagic effusion around the pancreas which was swollen and firm. On section it appeared to be full of effused blood. One large gall stone was found in the gall bladder. No fat necrosis was seen.

Microscopical section of the pancreas showed that there was a good deal of fibrous tissue laid down between the lobules of the gland. The parenchyma of the gland was completely necrotic, a cell here and there only showing a nucleus, and this in a state of degeneration. There was diffuse general haemorrhage into the gland and many areas of fat necrosis, with only slight inflammatory reaction.

PATHOLOGY.

The intimate anatomical association of the common bile duct and the pancreatic duct has been considered the important factor in the causation of this condition, the actual cause being the invasion of the pancreatic duct by bile or duodenal contents. This theory is based on the frequent presence of gall stones in these cases, the passage of a gall stone either diverting the bile into the pancreatic duct or so dilating the orifice as to allow duodenal contents to enter the now incompetent valves (of the ampulla of Vater).[2] Our cases strengthen this view, as in five out of six gall stones were present, and in the other there was evidence of old inflammatory trouble, possibly due to the former presence of gall stones.

Our opinion is that this condition is caused by the entrance of bile or duodenal contents into the pancreatic duct, which there activates the pancreatic ferment and causes a digestion of the gland, a circumstance which may be followed by the invasion of micro-organisms. In some cases this digestion apparently takes place without any invasion by micro-organisms. This digestion in the gland affects the blood vessels, leading to haemorrhage in and around the gland. This process then spreads beyond the confines of the gland, leading to the phenomenon of fat necrosis in other parts of the abdomen. It appears that fat necrosis is not seen in cases in which pancreatic juice alone has found its way into the peritoneal cavity, but that when this is mixed with bile the phenomenon occurs. The above theory of pancreatitis seems to us to be borne out by the pathological findings in these cases, in which all stages of the condition were met with, from the very earliest, in which the cells still stain fairly well but are seen to be separated from each other and from the basement membrane, to the most advanced, in which all indication of the structure of the gland has disappeared and only a few nuclear fragments are seen. These conditions, we maintain, are due to the invasion of the gland by bile or bile-containing fluid by way of the ducts. In some of these cases, too, we see inflammatory reaction and abscess formation in addition to the above features, and in these cases we suggest the gland has been secondarily infected by some micro-organism. If this infection does not take place, no inflammatory reaction is seen in the gland at all, and the case is not one of pancreatitis but pancreatic necrosis. The very acute symptoms observed in these cases is due, we suggest, to the absorption of toxic products of the digestion going on in the gland.

DIAGNOSIS.

All are agreed that the diagnosis of this condition before laparotomy is extremely difficult.

As regards history, though five of the patients had gall stones, only one gave a history of biliary colic or jaundice (Case I). Three cases (III, V, and VI) had had bad "indigestion" for over a year with or without haematemesis, which made one suspect perforated gastric or duodenal ulcer. In all the cases the condition started suddenly with pain and vomiting, the latter being frequent and copious, as is usually noted.

In all the abdomen was rigid and tender; in one case (No. III) the tenderness was most noticeable in the upper part of the abdomen, and in one case (IV) in the left loin. In Cases II and III there was obvious dullness on percussion above the pubes.

An extreme degree of collapse was a marked feature in four of the cases. In Case III the patient was pulseless at the wrist within twenty-four hours of the onset, and remained so for twenty-four hours after the operation, when she began to improve. Cases V and VI ended fatally within twenty-four hours of the onset of acute symptoms.

In our opinion the extraordinary amount of collapse is the only symptom which would suggest the diagnosis; but in some cases, probably of a less acute nature, assistance may be obtained by finding a localized resistance in the upper part of the abdomen.

Treatment.

In acute abdominal conditions with sudden onset it will generally be admitted that, whether a definite diagnosis has been made or not, surgical intervention holds out the best chance of recovery. In this condition death is almost certain to ensue unless the process of necrosis is arrested by incising the gland and free drainage; this should be performed as soon after the onset as possible; delay is fatal. That operation may be successful is proved by the published cases.

After performing a laparotomy a definite step in the diagnosis is made if dirty red-brown fluid is found in the pelvis, which was a marked feature in Cases II, III, and IV. If there is fat necrosis in the omentum the diagnosis is fairly obvious; but fat necrosis, although present in all the cases operated on, occurred in the omentum in only two of them (Cases III and IV); in Cases I and II it was present, at the time of the operation, only in the mesentery of the small intestine and in the transverse mesocolon. Finally, the pancreas will be found to be greatly enlarged, and the question arises whether one should be content with simple drainage of the pancreatic region, or whether cholecystostomy should be performed. One should be guided, we consider, chiefly by the general condition of the patient. As a rule, any prolongation of the operation should be avoided.

As a preliminary to the operation, we think it advisable to wash out the stomach, as in other conditions in which frequent and profuse vomiting is a feature. Measures to combat the marked collapse should also be taken *prior* to the operation, the most reliable, after warmth, being saline infusion and the exhibition of pituitary extract.

Since writing the above we have had the opportunity of seeing another case of this disease:

Case VII.

A male, aged 47, who for several years had suffered with occasional attacks of pain in the epigastrium which had no relation to food, but had never been jaundiced, at 3 a.m. on May 6th, 1912, was suddenly seized with severe pain in the epigastrium, and vomited once. He was admitted to the Norfolk and Norwich Hospital at 4 p.m., and shortly after this his bowels were open. He was then collapsed and cyanosed, with rapid, feeble pulse. There was no movement of the upper abdomen on respiration, slight tenderness on pressing over the epigastrium, abdominal muscles rigid, and marked dullness in both flanks. The liver dullness was not obliterated.

Operation.

He was given 3 pints of saline and 1 c.cm. of pituitary extract by infusion during the operation. Mr. E. W. Everett performed suprapubic laparotomy and found blood-stained fluid in considerable quantity in the peritoneal cavity; he inserted a tube into the pelvis and then opened the abdomen above the umbilicus. On lifting up the omentum, fat necrosis was seen and the gall bladder was found to be full of stones. The latter was opened and drained, and the supraumbilical wound was closed. The patient was returned to bed in the Fowler position and continuous saline infusion administered by the rectum. He died at 10 p.m.

Necropsy.

A well-nourished, muscular man. General peritonitis, with dirty blood-stained fluid in the peritoneal cavity. Fat necrosis in the great omentum, appendices epiploicae, mesentery, and on the under surface of the diaphragm—most marked in the region of the spleen. The pancreas: head and first part of the body dark red in colour and of the consistency of soft india-rubber; the rest of the body and the tail appeared normal. The bile ducts were patent and apparently normal. The pancreatic duct was apparently normal, and was not bile-stained.

Microscopical sections show that the head of the pancreas is completely necrotic, no sign of the gland substance remaining; this part of the gland is extensively infiltrated with blood. The tail of the organ is seen to be in the first stage of necrosis, but no haemorrhage has taken place here. Between these two points all stages of necrosis are found. Throughout the organ there are areas of fat necrosis, but nowhere is there seen any evidence of inflammatory reaction.

In conclusion, we wish to record our thanks to Dr. H. J. Starling and Mr. E. W. Everett for their kind permission to use the notes of the cases under their care.

References.

[1] Moynihan, *Keen's Surgery*, vol. iii. [2] Opie, *Disease of the Pancreas.*

THE Middlesex Hospital and the New Hospital for Women each receives a bequest of £2,000 under the will of the late Mr. John Anderson, of Porchester Terrace, W.

THE DIAGNOSIS AND TREATMENT OF INTESTINAL OBSTRUCTION.*

By EDWARD DEANESLY, F.R.C.S.,
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Excessive Mortality.

It is a reproach to our profession that many hundreds of men, women, and children die every year from intestinal obstruction due to mechanical causes. It is no exaggeration to say that in every case life could be saved or prolonged by surgical operations performed at an early stage of the illness. The mortality of cases of acute obstruction of the bowels submitted to operation is still appalling, probably as much as 75 per cent., and this is entirely due to the large number of cases in which surgical aid is sought or accepted as a last resource, although it is obvious that mechanical obstruction can only be removed by mechanical means. This deplorable and unnecessary waste of life is mainly due to the continuance of the old tradition which assigned all internal diseases to the province of the physician, or as the Germans put it, of "inner Medicine."

An Essentially Surgical Condition.

No modern physician would, of course, deny that the treatment of mechanical obstruction of the bowels is wholly and solely a surgeon's job. He is justified, of course, in pointing out that it is sometimes a matter of great difficulty to decide whether a given patient has or has not obstruction of the bowels, and whether, the fact of obstruction being admitted, it may not be due to some cause capable of spontaneous disappearance. Influenced, however, by such doubts, the tendency of the physician is to wait and see. No doubt most problems are eventually solved by this method, but when the solution is so often made at the expense of the patient's life, it would seem a speedier and safer way to open the belly and look.

I do not suggest that medical practitioners are wholly to blame for the late stage at which the majority of cases of intestinal obstruction reach the hands of the surgeon. The ancient habits and beliefs of medicine continue to be cherished by the public long after they have been discarded by the profession, and many patients still abstain from seeking medical advice until they have treated themselves on orthodox lines by purgatives, enemata, and poultices without relief. Too often, nevertheless, when the practitioner is called in attempts are made to continue this futile treatment instead of making a definite diagnosis, or advising an exploration.

Confusion between Constipation and Obstruction.

The reluctance both of the practitioner to advise and of the patient to accept an immediate or early operation is due in no small measure to an habitual confusion between the ideas conveyed by the terms "constipation" and "obstruction." The term "obstruction" is generally, and should be always, used to mean actual mechanical obstruction to the lumen of the bowel sufficient to hinder or actually arrest the onward flow of the intestinal contents at a particular point. Obstruction so defined, if it exists, is obviously a surgical condition, curable only by surgical means, and surgically urgent in proportion to the acuteness and degree of the obstruction.

The term "constipation," on the other hand, means nothing more than some greater or less delay in the periodical evacuation of the bowels. It is quite common to meet with persons who habitually go several days without an evacuation, and not very uncommon to see a patient who has had no evacuation for as much as a week or more without showing any signs of acute illness or even discomfort, and without obstruction of the bowel at any point. It is true that this delayed progress of the intestinal contents, or intestinal stasis, is often associated with certain anatomical changes in the large intestine, and that it has been attributed by Sir Arbuthnot Lane and others to certain sharp bends or kinks caused by the dropping of certain parts of the colon, so that it might be described as a form of organic intestinal obstruction. Whether we accept Sir Arbuthnot Lane's theory or not—

* A paper read before the Staffordshire Branch of the British Medical Association.

on which for the moment I express no opinion—his cases have none of the clinical features of cases in which the lumen of the bowel is demonstrably affected, and Sir Arbuthnot himself describes them as cases of chronic constipation—a term which, as I have pointed out, does not usually, and should not imply obstruction.

Distinguishing Features of Obstruction.

Pain.

What, then, are the clinical features which distinguish obstruction from mere constipation? The first in importance is pain. In all acute abdominal illnesses pain is a prominent feature of the onset, and is common to such different conditions as visceral perforation, visceral strangulation, acute inflammation of the appendix or pancreas, and acute intra-abdominal haemorrhage. The pain due to intestinal obstruction does not, however, develop until more or less violent peristalsis is excited in the bowel above the obstruction. During the early stage of an acute strangulation it may be obscured by the pain and shock of the initial lesion, but as this subsides the colicky pain of peristalsis takes its place. It is paroxysmal and of the kind known as griping. After a time it is often accompanied by visible or palpable peristalsis. This sign, whether in an acute or chronic case, always means obstruction of the bowel lumen, and is a definite and safe indication for immediate operation.

Distension.

Distension is the next sign to consider. It is a necessary sequel of obstruction, since the gas normally present very soon accumulates above the obstructed point, and is rapidly increased by putrefactive changes in the stagnant intestinal contents. The absence of intestinal distension more than twelve hours after the onset of abdominal pain practically negatives obstruction, except in a few cases where the obstructed point is very high up, and in these cases it may pass into the stomach, and is relieved by vomiting and eructation. The presence of any well-marked degree of distension, on the other hand, is strong evidence of the existence of something more than constipation, and to that extent is a danger-signal of great importance.

In acute cases, of course, distension does not necessarily imply intestinal obstruction at a definite point, since it is one of the earliest and most constant symptoms of acute peritonitis. But that distension without peritonitis means obstruction and indicates the need for operation is a clinical rule which should seldom be disregarded, whether in acute or chronic cases. When obstruction and general peritonitis coexist, the obstruction may be merely an incidental complication of the peritonitis, or peritonitis may be the latest stage of unrelieved obstruction. In either case the need for operation is apparent, but it must be remembered that most cases of mechanical obstruction, if unrelieved, generally terminate fatally from exhaustion and toxaemia, and remain free from general peritonitis to the last, so that if signs of peritonitis occur early the case is almost certainly not one of simple mechanical obstruction.

Muscular Rigidity.

The most valuable distinguishing sign between peritonitis and obstruction is undoubtedly muscular rigidity. In simple mechanical obstruction, muscular rigidity of the abdominal wall is absent. In commencing general peritonitis, it is practically safe to say that it is never absent. In visceral perforation—for example, gastric ulcer—in spite of the intense pain, rigidity is usually absent if the patient is examined immediately after the occurrence of perforation. Its subsequent occurrence marks the onset of peritonitis after an interval varying in different cases according to the amount and virulence of the escaped intestinal contents.

Intermittent griping pain, accompanied by intestinal distension and without muscular rigidity, point to obstruction both in acute and chronic cases.

Rise of Temperature.

Other symptoms help us to distinguish general peritonitis from intestinal obstruction, but they are of less value than rigidity, for most of them develop or differentiate themselves later in the case, while it is of vital importance to make the diagnosis at the earliest possible moment.

A rise of temperature usually follows the onset of peritonitis, and is absent in simple obstruction. But in a case seen early it is folly to wait for a rise of temperature when more significant signs already exist; moreover, the absence of febrile temperature does not even negative extensive peritonitis.

Rising Pulse-Rate.

A rising pulse-rate after an attack of acute abdominal pain points rather to perforative peritonitis than obstruction, and is an indication of grave internal mischief seldom disregarded. In simple obstruction the pulse and temperature may both be unaffected after the first onset symptoms, and this is one of the commonest reasons for dangerous delay, since many practitioners even nowadays do not appear to realize that a patient may be acutely and dangerously ill with a normal temperature and pulse-rate.

Vomiting.

Vomiting, like pain and distension, is a cardinal symptom both of obstruction and peritonitis; but there are significant differences in the time and manner of its occurrence. Vomiting soon after the onset of the pain is common to nearly all acute abdominal cases, and does not help to distinguish one cause from another. But if it does not cease at the end of the first twenty-four hours, and if the signs of peritonitis are not excessively severe, obstruction should be suspected.

Repeated vomiting, continuing after the stomach has been relieved of its original contents, and then followed by the prompt rejection of liquid food soon after it is swallowed, are symptoms which occur from the beginning in acute obstruction, and do not occur in peritonitis till the last and usually fatal stage.

Incessant vomiting, continuing from the onset of illness, is, of course, a familiar feature of acute gastro-intestinal poisoning, both by organic and certain mineral poisons, but such cases are seldom in danger of confusion with either peritonitis or obstruction. More often than not they are accompanied by diarrhoea, but the absence of early distension and of muscular rigidity distinguishes such cases from obstruction even where an absence of a recent evacuation of the bowels suggests the possibility of acute obstruction.

Violent lead colic has, however, been often operated on for acute obstruction—a more pardonable error, at any rate, than waiting too late for a successful diagnosis.

Absence of Bowel Evacuations.

Absence of bowel evacuations is the most direct and immediate result of complete obstruction of the lumen of the bowel, but I have left the discussion of its significance as a symptom to the last because lapse of time, sometimes of many days, is required before absence of evacuation has, taken by itself, any significance. It has already been pointed out that what distinguishes obstruction from mere constipation is not the length of time which may have elapsed without a motion of the bowels, but the coexistence of distension and vomiting in obstruction, and the absence of these symptoms in constipation. The absence of any escape of gas from the rectum is of far greater significance. If none whatever has been passed for more than twenty-four hours, obstruction may be suspected, and if the time is still longer, there can hardly fail to be accumulation of gas and distension of the abdomen—signs pointing strongly to obstruction in cases where signs of peritonitis are absent. It cannot be too strongly insisted that the passage of solid motion and even gas after the use of enemata is no proof whatever that obstruction is not present or has been relieved. I have met many instances in which dangerous delay in operating has been due to misleading importance being attached to the result of enemata. On the other hand, the spontaneous passage of flatus per anum may be accepted as proof that obstruction, if present, is not complete, and to that extent the urgency of the case is lessened.

Effect of Purgatives.

Inability to procure a motion of the bowels by means of purgative medicines is one of the oldest methods of testing the question of obstruction, and has usually been practised by the patient's friends before the doctor is sent for. If real mechanical obstruction exists purgatives

are useless, and in the later stages dangerous. If no obstruction exists there is no urgent need for an evacuation, so that where obstruction may reasonably be suspected, purgatives are best avoided. Only in the early stages of a doubtful case of acute obstruction is it permissible to use a full dose of castor oil with a view to clearing up the diagnosis.

Two Questions to be Decided.

In discussing the symptoms and diagnosis of intestinal obstruction I have only alluded incidentally to the distinction between acute and chronic obstruction, because this question in any given case is of secondary importance in deciding whether an operation is or is not required. The first two questions which every practitioner should ask himself when called to any abdominal case, acute or chronic, in which pain, distension, and vomiting are present, are:

1. Is there acute peritonitis?
2. Is there intestinal obstruction at a definite point?

If there is good ground for believing or even suspecting either of these to be present, the case should be at once regarded as definitely surgical, and the responsibility for operating or not operating is emphatically one for a surgeon, since no one can maintain that either Nature or the physician can be trusted to cure either of these conditions if they exist, and to wait for full proofs in a doubtful case is to run risks compared to which the risks of an unnecessary operation are trifling. The distinction between acute and chronic obstruction is misleading also from a clinical point of view if the distinction is based, as it usually is, on the anatomical conditions which may be respectively classified as acute or chronic in their mode of origin. The really urgent and important points in a given case are the degree of the obstruction of the bowel lumen and the high or low position of the obstructed point or points.

Whether the cause of the obstruction has taken a considerable time to develop, like a stricture or a fixed kink, or has been brought into existence suddenly, like an intussusception or an internal strangulation, urgency only arises in either case when obstruction has become complete or nearly complete. Whether the cause of obstruction is acute or chronic in its origin, the actual onset of complete obstruction is usually sudden, and the doctor is frequently not summoned till distension has begun. The cases in which obstruction is most often not recognized, and is, therefore, allowed to remain unrelieved for a dangerously long period, are those in which the point obstructed is low down in the intestinal tract—for example, malignant stricture of some part of the colon. In such cases, although the history and symptom point clearly to the nature of the case, the surgeon is too often only summoned when vomiting and distension occur, which is generally many days after obstruction is complete. The mortality of these cases when submitted to colotomy is, in my experience, quite as high as that of cases of acute internal strangulation, although if promptly recognized it should be almost *nil*.

Some Maxims.

The moral of the whole matter cannot be too emphatically stated or too often repeated, and it is this: Do not confuse constipation with obstruction. Always consider the possibility of obstruction when pain, vomiting, and distension exist together. If there is no rigidity and no fever in such a case, obstruction is practically certain and operation is urgently indicated. Above all, do not waste time with such futile and dangerous things as purgatives and enemata. If these rules were more generally followed the mortality of intestinal obstruction would be less appalling than it actually is.

The diagnosis and recognition of intestinal obstruction is a matter with which every medical practitioner should be familiar. The treatment of it is necessarily and exclusively surgical. There is no medical treatment of obstruction any more than there is of stricture of the urethra, or compression of the trachea, or of strangulated hernia. The sooner the advice recommending the administration of purgatives and enemata, the hot applications to the belly, and other futilities are left out of our medical textbooks, the better it will be for the next generation of practitioners and patients.

Localization of the Obstruction.

Obstruction having been diagnosed and an operation decided on, the surgeon is confronted with a number of problems, some of great difficulty, on the proper solution of which in individual cases the result depends. The first problem is, of course, to find the point or points of obstruction, for in certain cases they may be multiple. In some cases the point is definitely known—for example, as when the seat of obstruction can be felt in the rectum itself. In others it is clearly indicated and located by the presence of some kind of abdominal "lump" or by the presence of active peristalsis ceasing abruptly at a particular point, or it may be suggested by the presence of an abdominal scar or the history of a previous surgical operation—for example, for appendicitis or for some gynaecological condition.

The Various Pathological Causes.

Failing any direct indication of the seat of obstruction, a review of the patient's age and clinical history often affords valuable suggestions. The pathological conditions which give rise to obstruction should be recollected. In infants and young children intussusception and tuberculous peritonitis are responsible for the great majority of cases. Congenital narrowing of the intestines, especially of the colon, should also be remembered, and strangulation by a congenital diverticulum is not uncommon. In persons below middle age I should place first in importance and frequency strangulation of some part of the small intestine by one of the various forms of internal hernia, and kinking and obstruction of the small intestine by old peritonitic adhesions. Of the latter, tuberculous peritonitis, including tuberculous mesenteric glands, is perhaps the commonest cause, and may be met with at any age. Adhesions binding down and kinking the lowest portion of the small gut from past appendicitis are also common, and in women evidence of old pelvic peritonitis of tubal origin, or due to the presence of pelvic tumour should always be thought of and looked for. After middle age perhaps the commonest cause of organic obstruction is stricture of some portion of the large intestine either from epithelioma or from tuberculous ulceration. The latter is usually in the neighbourhood of the caecum.

Interpretation of Clinical History.

In reviewing the clinical history the mode of onset of the obstruction is a point of chief importance. If it begins suddenly, with an entire absence of previous ill health or abdominal trouble, one of the sudden lesions must be assumed—for example, internal hernia, intussusception, or volvulus. If the onset is not absolutely sudden, some indication of a more gradual disease will usually be found in the previous clinical history. In all cases it is assumed that the presence of any of the ordinary forms of external hernia has been carefully sought for and excluded.

The above examples do not pretend to be systematic or exhaustive, but they illustrate the mode of reasoning by which the surgeon seeks to solve the first problem with which he is confronted when about to operate for intestinal obstruction—namely, where to make his incision.

Site of Abdominal Incision.

This is a point of no small importance, because the saving of time is essential. Where the point of obstruction is known or approximately indicated, the incision should be made so as to give the most direct and most ready access to the point of obstruction. When no such indication exists the surgeon must either make a systematic exploration of the whole abdomen until he localizes the obstruction or he must content himself with giving immediate relief by opening and draining some part of the distended intestine above it. The latter course has been strongly recommended by good surgeons as the best course to pursue in desperate cases where operation has been delayed and the patient is dangerously exhausted. It is, however, a counsel of despair, and should only be applied to the most desperate cases. In cases of acute strangulation mere relief of the distended bowel will not avert a fatal issue if the strangulation itself is not relieved, and there must be few cases in which it is wise to suspend the obvious first rule of operating for obstruction

—that is, localize the spot and verify the cause. In order to carry out this rule, it is usual to make the ordinary median incision below the umbilicus and search for a palpable cause—for example, a band or an intussusception—by inserting the fingers or the whole hand. In this way one may sometimes light on the cause without much difficulty, but in others—a rapid examination—nothing may be felt, and if there is much distension, as there usually is, satisfactory palpation of all parts of the bowel is often impossible. The next proceeding is, then, to seek and draw up into the wound collapsed and empty bowel and to trace it upwards until the point of obstruction is reached. The difficulties and dangers of this procedure are familiar to all abdominal surgeons. It frequently ends in finding the obstruction only after a great mass of distended intestine has escaped from the abdomen, and then great difficulty is found in replacing it. The result is that the patient usually dies in a few hours of shock, even if the cause of obstruction has been removed. For this reason the incision should be quite small, and not more than a single loop of bowel should be drawn outside the abdomen at one time.

For acute obstruction of the bowels, where there is reason to expect an internal hernia, a volvulus, or pelvic adhesions, the ordinary median incision and systematic examination of the small intestine from below upwards is, I think, the best course to pursue in spite of the difficulties I have mentioned, provided attention is paid to rapidity and to gentle manipulation, but when there is no indication whatever as to the site and nature of obstruction, and especially where the patient is obese and much distended, I prefer to make an oblique incision in the right iliac region immediately over the caecum. An examination of the latter at once shows whether the point of obstruction is above or below it—that is, whether it is in large or small intestine, from the presence or absence of distension.

Opening the Caecum.

If the caecum is distended and the condition of the patient precludes further search, immediate relief can be given by caecostomy without the necessity of verifying the exact site of the obstruction. The majority of cases of obstruction with distended caecum prove to be malignant stricture of some part of the colon which can be dealt with at a later period. The only condition to which a caecostomy "in the dark," so to speak, would be inapplicable would be a volvulus of the sigmoid flexure, in which the distension is usually so great that it could hardly fail to be found and recognized even through an incision over the caecum.

Advantages of Caecostomy.

There is another important advantage in opening the caecum in preference to performing a colotomy immediately above the obstruction, apart from the saving of time and avoidance of prolonged manipulation of the abdominal contents, because this operation does not hamper the performance of a radical operation for the removal of the strictured portion of the colon at a subsequent period to anything like the same extent as a colotomy near the obstruction. A left inguinal colotomy, for example, performed for the relief of obstruction at the upper part of the rectum practically precludes a restoration of natural defaecation even where the anatomical conditions would otherwise have made this a feasible operation.

Again, the contents of the caecum being usually liquid, even in advanced obstruction, not only is a more rapid relief given by a colostomy in this situation, but it is far easier to establish a temporary fistula which can be subsequently closed, than in the lower portions of the colon.

Advantages and Disadvantages of Colostomy.

The question whether in any given case an operation for obstruction should or should not conclude with the establishment of an immediate drainage, by means of colostomy or enterostomy, is often difficult to decide, and on its correct decision the result mainly depends. Where the obstruction is in any part of the colon, it is seldom that it can be relieved without a colostomy when natural evacuations have ceased for several days and the bowels are much distended with gas and faeces. When the obstruction is in a movable part of the colon—for example, the transverse colon or sigmoid flexure—it is possible to bring the affected loop of bowel outside the abdomen, resect it, and tie in a tube into the upper end, thus both removing the disease and giving immediate relief. Nevertheless this course, though easy and rapid, is not to be commended, because the closure of the fistulae so formed is generally attended with more difficulty and more risk than the resection of the strictured portion of bowel followed by immediate suture of the divided ends. For this reason it is better, as I have previously mentioned, to relieve the obstruction by a temporary caecostomy, and leave the radical operation till later, when it can be done under favourable conditions both as regards absence of distension and of local sepsis.

Treatment of Small Intestine.

The question of making an artificial anus is more difficult to decide when the obstruction is at some point or points in the small intestine. Malignant disease of the abdomen so advanced as to obstruct the small intestines is generally so diffuse that little relief is to be gained by making an intestinal fistula. But the majority of cases of obstruction of the small intestine are caused by bands and adhesions, the division of which is the first and most obvious indication of any operation for their relief. When the band is single and the obstructed or strangulated portion of bowel presents no signs of irrecoverable damage, the case differs in no respect from an ordinary strangulated external hernia, and is treated in the same way—that is, the bowel is replaced in the abdomen and the wound closed. In other cases, if the vitality of any portion of the bowel is doubtful, it must either be resected or at least left outside the abdomen. The exact procedure in any case depends on the judgement and experience of the operator, and no decision in surgery puts them to a more difficult test. The condition of the patient, the amount of bowel requiring resection, the time required to complete the operation, and the functioning of the bowel afterwards have all to be taken into account, and no rules can be formulated which will cover all cases.

A few guiding principles may, however, be given as the results of my own experiences, both fortunate and unfortunate. The first rule is that where there is much doubt as to the recoverability of bowel it is better to resect than to leave it. The second rule, which certainly applies to strangulated hernia, and probably with equal force to internal strangulations, is that resection, followed by immediate enterorrhaphy, is superior, both in its immediate and in its ultimate results, to division of the operation into two stages, in which, in my experience and observation, the patient seldom fails to die at the second stage, even if he tides over the first. I do not deny that surgeons are sometimes called upon to operate on cases of internal strangulation and of intussusception in which large pieces of bowel are already gangrenous, and in which time and shock do not allow more than the rapid removal of the dead or damaged bowel and the establishment of a rapidly performed enterostomy. Most of such cases are practically moribund when operated on, and no other course is open.

Temporary Enterostomy.

Enterostomy properly performed is a most valuable procedure, not as a substitute for immediate suture after resection of bowel, but as a temporary exit for the faeces during the first few days after the strangulating band or adhesion has been divided, and even in some cases after a primary enterorrhaphy has been performed. Every surgeon who has operated for strangulated hernia must have seen cases which have "died cured." That is to say, the strangulation has been relieved, the strangulated bowel has shown the usual signs of being alive, and has been replaced in the abdomen. Nevertheless, vomiting and distension have not been relieved. At the end of twenty-four or forty-eight hours the patient has died, and at the *post-mortem* examination the strangulated coil has shown no sign of gangrene, but has been merely collapsed and empty. The same sequence of events may be sometimes seen in a case of strangulated hernia, where damaged bowel has been resected and a primary enterorrhaphy performed. In such a case also no defect in the bowel or in its mode of suture may be found at the

post-mortem examination. In either case death is caused by unrelieved intestinal obstruction, and the same occurrence is not infrequently noticed after operations for internal hernia or obstruction by intestinal adhesions in which the mechanical cause of the obstruction has been removed without relieving the obstruction itself.

The explanation of this fact is by no means clear. It is sometimes described as "paralytic ileus"; but however applicable this description may be to some cases of distension with obstruction, following severe abdominal operations, not involving the intestines themselves, it certainly does not fit the cases I have described. So far from being paralysed, the bowels above the point at which strangulation was relieved frequently continue in a state of active visible or palpable peristalsis. It is obvious that the strangulated coil of bowel or the adjacent portions which have been united after resection of the strangulated part in some way oppose an insuperable obstacle to the passage of the intestinal contents, even when propelled by unusually powerful peristalsis, just as a dead or functionally inert segment of bowel caused by mesenteric embolism will cause intestinal obstruction without any mechanical stoppage of its lumen. Why the interposition of a passive but easily distensible segment in the course of the intestinal tube should cause obstruction within the abdomen, and not do so when an equally passive tube of thin rubber is tied into the bowel and brought outside the body, is difficult to explain, but it is certainly a fact. In order to avoid this danger, without sacrificing the great advantages of an immediate restoration of the continuity of the bowel after enterectomy, I have on several occasions successfully resorted to a temporary drainage by means of a small rubber tube sewn into the bowel some inches above the line of section, and brought out through the abdominal wound. For this purpose, in the small intestine, an ordinary rubber catheter of No. 12 to 14 English scale suffices. It is passed through a small incision in the bowel, and fixed by means of a suture which transfixes both the bowel wall and the catheter itself. A second sero-muscular purse-string suture is then inserted in such a manner as to invaginate the first incision, and the bowel is then placed within the abdomen, taking care to avoid kinking.

The tube becomes loose in a few days, and leaves a small fistula which closes without difficulty as soon as the natural function of the united intestine is resumed. I regard this method as far superior to that of merely resecting the gangrenous or damaged loop of bowel and placing drain tubes in each lumen, since this method, even if the patient recovers, demands a difficult and dangerous operation for the subsequent restoration of the continuity of the bowel.

In conclusion, I should like to emphasize once more the following points: Large numbers of patients die every year from intestinal obstruction due entirely to mechanical causes which are remediable by surgical operation and by no other means. The majority of these fatal cases are not operated on until a late stage in the disease, and most of them are in the first instance treated by drugs or applications, internal or external, which cannot possibly give relief. The difficulty of diagnosing the existence of mechanical obstruction is increased by the popular confusion between constipation—that is, temporary suspension of the motor functions of the bowels—and real obstruction—that is, mechanical hindrance at a definite point. The consequences of the latter condition are so serious and so urgent that the question of its existence should be carefully considered in every case of abdominal illness in which pain is associated with vomiting, distension, and absence of recent bowel evacuation. If the possibility of obstruction cannot be excluded after a short period of observation, surgical assistance should be obtained as soon as possible. Obstruction of the bowels within the abdomen is just as much a surgical disease as strangulated hernia. The difficulty of the diagnosis in the former merely adds to its dangers, the greatest of which is delay.

A BILL is being promoted in Parliament which provides for the construction of a crematorium for South London in the parish of Lambeth.

THE late Surgeon-Lieutenant-Colonel H. W. Kiallmark, formerly of the Royal Bucks Hussars, left estate valued at £17,156. He left £1,350 to charitable institutions.

A CASE CONTRIBUTING TO THE STUDY OF FEVER WITHOUT OTHER PHYSICAL SIGNS.

By H. GWYNNE LAWRENCE, M.B.Lond.

THE subject of the following notes was under observation for ten months. For the first six months he presented very little in the way of physical signs, although throughout this period he was the subject of marked fever—at first intermittent, with definite periods of apyrexia, but latterly remittent, and finally continuous.

The patient, aged 62 years, fifteen years ago resided in India for five years without any detriment. Two years ago he had an attack of tachycardia which passed off in a short period, and for three years he had suffered from an annual febrile attack believed to be influenza. No evidence was obtainable of alcoholic or dietetic excesses. The only other important detail upon which he laid much stress was the fact that all his life any form of aperient upset him profoundly, as did also enemata. For the first six months symptoms other than could be attributed to the fever were completely absent. During the last four clinical signs of cirrhosis of the liver appeared.

In the earliest days a bad night would be followed by a tongue thickly coated with a brown moist fur, the breath would be "heavy," the skin dry and hot, the face slightly yellow tinted, and occasionally some flatulent distension of the colon could be recognized.

The temperature rose at 6 p.m. daily to 102° or rather higher, and was at the normal line again at 6 a.m. This continued for a period of from ten to fourteen days, when a similar period of apyrexia occurred, and the patient became comfortable, and the tongue cleaned to a great extent, but not absolutely.

Conspicuous features at the height of the fever were the facts that the pulse was little disturbed, and rarely exceeded 62 in frequency, and that the respirations remained at 20 to 24. The skin was hot and dry, the bowels acted well, or only required gentle stimulation, and no after symptoms, for example, headache, etc., were experienced.

Blood examinations showed marked leucopenia. The red cells were practically normal in amount, with some deterioration in haemoglobin; the white cells were 2,300 per c.cm.

Agglutination tests to enteric and Malta fever were negative, as was also Wassermann's reaction. Blood cultures proved negative on all occasions.

Treatment was directed against pyorrhoea alveolaris, which was present, but only temporary improvement of this condition occurred, and the course of the main disease was absolutely uninfluenced. This state continued for six months. The liver became gradually more and more displaced upwards by the abdominal distension, the upper margin eventually reaching the fourth space in the vertical nipple line. During this period occasionally a slimy mucous stool, offensive in character, was passed, and an occasional attack, of short duration, of tachycardia occurred.

In the apyrexial period the appetite was good, the general nutrition improved, and there was a complete absence of symptoms.

At the sixth month ascites began to develop, and the abdominal distension was a continuous feature. The base of the right lung showed signs of compression, the skin became yellowish in tint, and showed loss of elasticity. The evidence at this period, from a clinical point of view, suggested the cardinal signs of cirrhosis of the liver—jaundice, ascites, and a liver apparently (by *x*-ray examination) of even contour, but rather smaller than normal. The spleen could be felt at the rib margin, and some discomfort was experienced over the splenic area. At this stage the blood cultures again proved negative, and the leucocyte count amounted to 1,716 per c.cm. The differential count was:

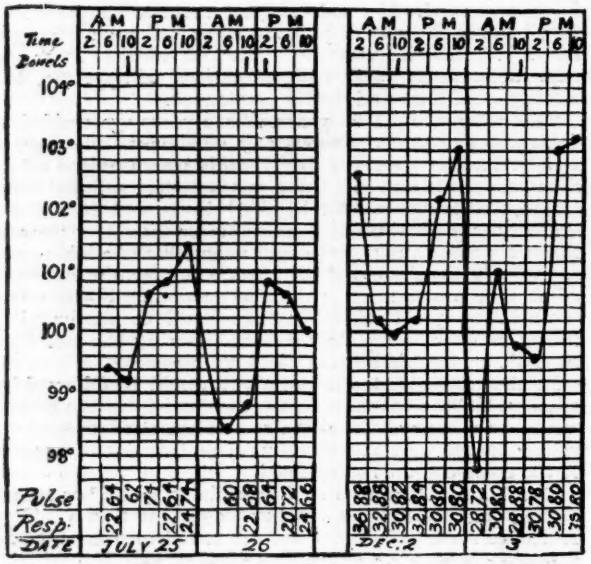
Polymorphonuclear	41 per cent.
Mononuclear	25 ,,
Lymphocytes	32.62 ,,
Eosinophiles	1.38 ,,
Red cells (per c.cm.)	3,800,000

For a short interval acute pain was experienced at the

point of the left shoulder, in the region supplied by the fourth cervical nerve.

For the last two months the temperature was constantly raised, generally reaching 103° at 6 p.m. The pulse was little affected as regards frequency until cardiac weakness appeared in the last few weeks.

Faecal examinations showed an unusual number of microbic elements and an unusual type of coliform bacillus,



In the early period of disease.

In later period when symptoms of cirrhosis of the liver existed.

but the food elements were digested. In the later periods fats were not digested and bile was deficient. Urobilin was in excess in the urine.

Intestinal antiseptics—for example, salol, paraffin, etc.—were administered from the start, but produced no benefit.

Necropsy.

A *post-mortem* examination by Dr. Spilsbury showed the following condition:

External.

There was some oedema of the lower extremities and scrotum. The abdomen was rather distended.

Internal.

Heart. All cavities dilated; muscle showed microscopically marked brown atrophy. Lungs: Partly compressed by diaphragm; they also showed passive congestion and emphysema. The peritoneum contained 3 to 5 pints of clear ascitic fluid. Liver: of about normal size, but increased weight. There was some surface irregularity, but little thickening of capsule. On section, the organ was very firm and dry. The cut surface had a mottled appearance, reddish and grey areas alternating. The organ did not appear greasy. No fibrous network could be detected with certainty. The gall bladder was normal, and contained pale and watery bile; the bile ducts were normal. Microscopically the organ was traversed by numerous broad, and in places interlacing, areas in which the liver cells were undergoing atrophy, and many had disappeared, the wide spaces between the cells being occupied by greatly dilated blood capillaries, which are not easily seen, owing to *post-mortem* changes.

In the meshes of this interlacing network were islands of liver cells which exhibited marked hypertrophic changes, the cells being of large size and staining deeply, and some having two nuclei apiece. These changes were not very regularly disposed, but the atrophic areas appeared to be chiefly in the central, the hypertrophic chiefly in the peripheral, zones of the lobules. All the liver cells contained some excess of pigment. Fatty infiltration was exhibited by some of the hypertrophied cells, but the atrophied cells contained no fat. There was a little recent fibrous thickening of the capsule, but none of the portal areas, except around some of the larger bile ducts; there was, however, some thickening of the walls of the hepatic vein tributaries. There were no myxomatous degenerations in the organ, practically no round-celled infiltration of it, and nothing to suggest an infective process.

There was no true cirrhosis or biliary cirrhosis, but a widespread atrophy associated with processes of compensatory hypertrophy—a condition of subacute hepatitis, probably of toxic origin.

The spleen was much enlarged—about 20 oz. in weight. Microscopically it showed advanced passive congestion. Smears from the spleen were examined for micro-organisms and malarial parasites, but without success. The blood in the organ showed, however, very marked anaemic changes of the red corpuscles with numerous nucleated red cells. The kidneys were somewhat enlarged but healthy; the other abdominal organs were normal.

The clinical features of a marked rise of temperature, remittent in type, and a definite leucopenia with evidences of gastro-intestinal catarrh, made diagnosis uncertain during the early stages owing to the conspicuous fever present.

The acute destruction of liver cells and the condition of acute cirrhosis makes it of particular interest pathologically. Investigations of a most thorough nature by Dr. Horder and Dr. Matthews failed to reveal any bacterial infection in the blood during the various stages, and possibly we should be right, in view of the slight constitutional disturbance, apart from temperature, in regarding the poison as being of a chemical nature.

THE SIGNIFICANCE OF FREQUENCY AND TENESMUS IN ACUTE CYSTITIS.

BY OLIVER HEATH, M.A., M.B., B.C.CANTAB.,
ASSISTANT BACTERIOLOGIST IN THE LABORATORIES OF PATHOLOGY AND PUBLIC HEALTH, LONDON, W.

THE main idea contained in the following may prove of interest, since its application in practice as an aid to vaccine treatment was followed in seven days' time by an absolute and permanent cure of an acute cystitis of just over one month's duration; and, further, since this result was obtained without the use of any drug, urinary antiseptic, or mechanical washings at any time during the course of the infection. The value of the method is not considered proven by the one case described; but since the writer is essentially an analytical pathologist, a series of cases is not easily obtained by him, and it must therefore be left to those who have the material at hand, and who may consider it worthy of serious trial, to put it to the test of experience.

At the outset it may be as well to state definitely that the term "acute cystitis" is used as applicable only to cases with both pus and bacteria in the urine, and does not here include bacteriuria without pus.

The history was as follows: A previously healthy man, a medical man, acquired gonorrhoea. A stained film of the discharge showed that this was caused by a mixed infection with the gonococcus, a *Staphylococcus albus* and a Gram-positive bacillus of the *xerosis* (or pseudo-diphtheria) type. There was no treatment other than care as to cleanliness, and the discharge disappeared in about three weeks. During the two months which followed there were two or three recurrences of a gleety character, which were not examined microscopically, but which cleared up; at the end of that time the patient began to realize that he could not hold his urine for longer than about two hours in the day, and had to get up once or twice in the night to micturate—that is to say, the infection had spread up into the bladder. This condition was allowed to continue untreated, owing to the great faith the patient put in his own unaided opsonic and phagocytic powers. However, these did not prove sufficient, and, after about one month of great discomfort, advice was sought from the writer, with a view to having a vaccine made.

Examination suggested that the condition was one of cystitis, with probably some post-urethral trouble, though no actual urethral discharge could be demonstrated macroscopically or microscopically. The urine contained a

moderate amount of pus, with numerous vesical cells, and both the stained films and the cultivations made from the centrifugalized pus showed staphylococci and bacilli of the *xerosis* type, but no gonococci.

The first point of emphasis is that the gonococci had entirely disappeared at this stage, the infection being kept up by the other bacteria which had been present in the original discharge. If I may judge from the frequency with which requests to search for gonococci accompany material from old urethral discharges, etc., and from the comparatively small percentage in which these can be found, the idea is fairly prevalent that sequelae to gonorrhoea are, at any rate in part, due to the gonococcus. In probably a majority of cases this is not the fact.

Treatment.

Acute cystitis is a bacterial infection of the wall of the bladder, in the damaged surface of which the bacteria reside and multiply; from it the damaged epithelium is discarded, and from it pus exudes in greater or less quantity, covering the damaged surface with a film which gets washed into the urine and evacuated, whilst fresh exudation from the lesion keeps up the supply. The whole picture represents an inflammation, and probably in most cases an ulceration, situated in the bladder wall.

When an infection occurs in any animal, certain symptoms and signs become apparent, and these will vary according as the bacteria or the patient's resisting power is the stronger. But in all cases these signs and symptoms are manifestations of the patient's "reaction" to the infecting agent, or of the failure of this reaction. In a typical case of bacterial infection of limited duration the reaction must be considered as good, and it is in such a case that we have sure indications of what may be called Nature's method of cure, the problem before us being to find the true and rational method of cure from observation of a typical case. In other words, we have to translate the signs which we can see into pathological processes the details of which we know from experiment.

In typical acute cystitis the marked symptoms are frequency of micturition, with usually more or less tenesmus after the act, and their appearance should be welcomed as an indication of a strong and healthy reaction to the bacteria. In seeking an explanation we must consider in more detail what this mechanism is. To this question physiology and recent pathology together have provided a clear answer. When the bladder wall contracts it thereby not only expels the urine and discarded pus, but also accelerates and flushes the local circulation of blood and lymph, bringing up a fresh supply of opsonins and phagocytes. Tenesmus, by its spasms, reinforces these efforts, continuing the process over a longer period, probably carrying some bacteria into the blood stream, where they will act by auto-inoculation and eventually increase the power of immunity, and at the same time enabling undiluted fresh pus to act on the bacteria with full effect.

The second point of emphasis, therefore, is that frequency and tenesmus are part and parcel of the process of cure, and should never be treated symptomatically. Drugs which will relieve the pain and irritation, if successful, only put a stop to the natural process of cure, and are positively harmful from a remedial point of view. When cure is effected the symptoms will cease naturally.

The third and main point of emphasis is that the tenesmus can be almost entirely, and the frequency partly, controlled by the simple expedient of controlling the amount of liquid taken by the patient. This is easy to understand if we consider that it is the irritation produced by the bacteria (or their products) contained in the pus which causes the symptoms. Consequently, as the irritant is more or less diluted in the bladder, so are the symptoms ameliorated or increased respectively. A large intake of water is, in fact, the simplest method of washing out the bladder, and can be made to act over an unlimited period by keeping up the supply; but in the treatment of acute cystitis this must be considered only as a temporary and entirely palliative measure. On the other hand, abstinence from drink, if the bacteriotropic power of the blood has been previously raised, can be used to bring practically undiluted fresh pus to act on the bacteria both in and outside the lesion—surely a more efficient *rationale* than the use of antiseptics.

In the case under consideration full use was made of the principles enunciated above; the vaccine was used practically to supplant auto-inoculations as being easier to control, and the supply of drink controlled so as to lessen reaction when there was risk of a "negative phase" of immunity, and to increase the reaction when a "positive phase" might be expected.

As a palliative measure, while the bacteria were being isolated and a vaccine prepared from each, a sufficient quantity of water was drunk to keep the bladder contents well diluted both during the day and at night, with the result that the symptoms were considerably ameliorated. As soon as the vaccines were ready active treatment was commenced by the subcutaneous inoculation of a dose of 50 million staphylococci and 25 million bacilli. Twenty-four hours later it was considered that any negative phase probable from this dose would have passed and that the bacteriotropic power of the blood might reasonably be expected to be increased; accordingly drink was withheld entirely from 4 p.m. with a view to increasing the frequency and producing tenesmus. This result was attained, and in about four to five hours the symptoms were marked. After a final unpleasant half-hour, in which the writer sat with the patient, one pint of water was given, followed in about twenty minutes by half a pint; the result was that the previous state of comparative comfort was entirely regained. This procedure was repeated at forty-eight and at seventy-two hours after the inoculation, as much water as was required to relieve the symptoms being allowed between times.

On the fourth day a second dose of vaccine was given containing 100 million staphylococci and 50 million bacilli, and forty-eight hours later drink was withheld for four to five hours, and for the reasons and with the result as noted above. On the following day the symptoms, judged from the patient's feelings, were markedly improved; the urine could be held about three hours; but drink was withheld that evening again, without, however, producing much discomfort. The day after this—the eighth day from the commencement of active treatment—the symptoms had apparently disappeared altogether, the urine being held four or five hours with comfort and passed in the ordinary way.

A third dose, of 150 million staphylococci and 75 million bacilli, was inoculated on the evening of the eighth day in order to make assurance doubly sure. From that day, now over three years ago, there has been no recurrence nor any sign of trouble, and the urine examined on that day was found to be free from pus and bacteria, and has been normal ever since.

A SIMPLE SPLINT FOR FLAIL ELBOW.

BY

RUSHTON PARKER, M.B., B.S., F.R.C.S.,

PROFESSOR OF SURGERY IN THE UNIVERSITY OF LIVERPOOL.

The recent use of a simple and effectual splint, enabling an otherwise destitute patient to earn a living, impels me to publish the case for the information and benefit of those interested.

The patient, a woman, has been off and on under my care for about forty years. She was born at Deptford about 1856, her father being the captain and owner of a sailing craft on which her parents usually lived, and her mother had gone ashore to be confined at some lodgings while the vessel lay at anchor in the Thames. When 5 years old the child fell down a staircase, her left arm being caught in the banisters and badly broken near the elbow. The vessel put into Liverpool, where she states that on account of deformity re-fracture was performed, and that a Liverpool surgeon was consulted, advising amputation, which her mother would not permit. Hitherto she had been attended in private practice, but the death of her father about this time left her mother without means, and both were admitted into the Liverpool Workhouse Infirmary. Here the elbow was excised, and after a time she was moved to the Kirkdale Industrial Schools, a children's branch of the workhouse, to which my father was surgeon. She came under my notice in September, 1870, the elbow being tender, not extensible

beyond an obtuse angle, feebly movable in flexion and extension, and the limb of little use except at the shoulder and fingers. The back of the elbow showed the scar of an H incision.

FIG. 1.—Flail-like left arm, with leather splint held in right hand.

The foregoing life-history is given because besides being very sensitive to pain, she was bright and intelligent beyond other inmates of the institution, which numbered chiefly the lowest class of the community. Her parents were of superior intelligence, had sailed all over the world, and she had lived in comfort until left destitute by her father's death.

In December, 1870, January, 1872, and March, 1875 (this time at the Stanley Hospital), I exposed the ends of the bones through a linear incision, with the view of improving their connexions, with this effect on each occasion, that, on wearing a hinged splint of iron, with attached leather laced or bandaged round the arm and forearm, she could use the limb in domestic work for her living; but left to itself it became a helpless flail.

In 1878 she was admitted under my care, and remained three months, in the Liverpool Royal Infirmary for great swelling of the abdomen due to distension of intestine, which gradually subsided under thin beef-tea diet followed by enemata.

In February, 1885, she was fitted with a splint of iron and leather fixed at an obtuse angle, and this answered perfectly for a time.

She was then lost sight of for twenty-six years, and in January, 1911, became an inmate of Mill Road Infirmary of the West Derby Union, Liverpool, owing to the flail-like condition, which came in her way after the wearing out of her splint and her inability to get another. The superintendent, Dr. Nathan Raw, told me of my old patient, and I went to see her. She could not get a situation, as the uncontrollable state of the limb and its uncanny wobbly state made people refuse to employ her. It then occurred to me to make for her the splint shown in Fig. 1, which also displays the "flail" condition. A piece of softened sole-leather, reaching the whole length of the upper arm, was roughly trimmed and bandaged over the bandaged arm. When dry the splint was further trimmed and fitted with a couple of straps and buckles so that she could apply and remove it herself with the other hand. The back of the splint reaches well below the false joint, preventing over-extension, and far enough at the sides to prevent lateral deviation. The corners in front are cut away to permit flexion, which can only be done passively by the aid of the other hand. But when the lame hand is brought up to her head she can "do her hair" and many other acts when once she gets hold with her fingers. In the extended position she can carry a bucket, as shown in Fig. 2, and was once more, at the age of 54, able to do domestic work. Dr. Raw tells me that she is a good cook, and I am indebted to him for the illustrations 1 and 2, taken by Mr. Joel, an official who does the photography at Mill Road Infirmary. In Fig. 2 unfortunately the light failed somewhat.

FIG. 2.—Splint on left arm, thus steadied to hold bucket (or other things, like long brush, etc.).

About 1880 I made a similar splint in a case of false joint resulting from compound comminuted gunshot fracture above the condyles of the right humerus in a young woman in the Liverpool Royal Infirmary. The condyles became ankylosed to the ulna, but a convenient false joint formed above; and to prevent lateral movement, while permitting firm hinge action at the elbow, a leather splint was moulded to the arm, its lower ends at each side being continued past the elbow as rounded wings. The arm was then fit to work a broom and do all domestic work. She was a strong, well-favoured young woman, who, after a couple of years or so as a servant, became married and comfortably settled in life.

FIG. 3.—Crutches with handles adapted to long and short arm. The latter passively bent in the splint.

FIG. 4.—Crutches grasped by hands so as to lessen dead weight in axillae. Feeble left arm steadied by leather splint.

On April 25th, 1913, the former patient, while a scullery maid at an hotel, fell and broke her right leg. While recovering from this, and still lame, she came to see me on July 30th on ordinary single-pole crutches, which she had difficulty in grasping, especially with the weak short arm. Moreover, the pressure of her weight on the axillary nerves had benumbed both arms. So I got other crutches with double supports, with cross-handle to them, and added a second handle to each, to fit her unequal arms, as shown in Figs. 3 and 4. This alteration I made myself on August 2nd before leaving home. The effect is quite satisfactory,

and the axillary nerves have since recovered from the effects of the previous pressure. On August 15th Mr. Thurstan Holland at the Royal Infirmary kindly ordered an *x*-ray photograph of the leg, which showed fracture, united, high up in the fibula. On September 15th he also kindly permitted the photographs Figs. 3 and 4 to be taken by his assistant, Mr. Woods, and developed by Miss Irven. This patient is blind of the left eye owing to cataract, but can see well with the right. She is living in lodgings on the proceeds of her insurance compensation until able once more to seek a situation. It will be seen that her life is a difficult one, and that her perseverance deserves encouragement.

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL.

TREATMENT OF TUBERCULOUS PERITONITIS.

In two apparently hopeless cases of tuberculous peritonitis in children I found the administration of the following mixture very beneficial:

℞ Calcii carb. (precip.)	128 grains
Ol. creosoti	32 minims
Mucil. tragacanth, q.s.	
Potass. iod.	16 grains
Saccharini	8 grains
Ol. menthae pip. vel anisi ...	5 minims
Aq. ad	8 oz.

Dose.—℥ij every four hours for a child of 5 years.

Tincture of opium or compound tincture of camphor may be added for the relief of pain and diarrhoea if present.

The cases were two boys, aged 3 and 5 years respectively. The younger I saw more than three years ago. He had large, easily palpable masses in his bulging abdomen, and all the other symptoms of this wasting malady well developed. He had been ill for a long time, gradually getting worse, and his parents had been informed that there was little or no hope of recovery. The elder I saw eighteen months ago; the intestines and peritoneal glands were matted into one mass about the size of a small foot-ball, somewhat irregular in outline, and not only palpable but observable under the abdominal wall.

I at once put him on the mixture; but as there were present attacks of severe colic with partial obstruction and vomiting, I sent him to a consulting surgeon in Manchester, who recommended laparotomy as being frequently beneficial in such cases, and a lateral anastomosis for relief of the intestinal obstruction. His prognosis, however, was so hopeless that the parents decided against operation, and the boy continued to take the mixture, supplemented by petroleum emulsion recommended by the consultant. A diet of easily digested food, principally of milk, was prescribed.

The first case, who took cod-liver oil emulsion along with the mixture, began at once to improve, and in two months the abdominal tumours had disappeared and his general health vastly improved. There has not been any recurrence, and to-day he is a fine specimen of a strong and healthy boy. The second case, like the first, began to improve directly he came under treatment, and in two months the abdominal mass had shrunk to the size of a Tangerine orange, and all the other symptoms, such as fever, pain, and diarrhoea, disappeared. At the end of another month I failed to detect any lump at all, and his general condition was much improved. He has continued in good health for over a year, and is a bright and healthy looking lad.

I may add that I have found this mixture, with and without opium, very beneficial in phthisis, particularly in less acute cases.

Hugh Lawrie, M.B., C.M., D.P.H., M.O.H.
Ramsbottom, Lancs.

RIGHT SHOULDER PAIN IN PERFORATED DUODENAL ULCER.

The case here recorded is, I think, of interest, first, because of the acute pain referred to the right shoulder, secondly, because of the association of appendicitis and duodenal ulcer, which has been pointed out by Drs. Mayo and Patterson.

W. C., a bricklayer aged 62, while at work on August 22nd, at 5 p.m. was taken with sudden and violent pain in the abdomen, and vomited once. He was driven home about two miles; on arrival he was somewhat collapsed, was put to bed, and vomited again. I was sent for at 9 p.m., and found him groaning with pain, which, he said, was in his right shoulder and abdomen. On touching the abdomen lightly he shouted out with pain in the right shoulder. The muscles on the right side of the abdomen were tense with board-like rigidity; the most painful spot was over the region of the duodenum, but he complained very much more of the pain in the shoulder than of that in the abdomen. The temperature was 99° F. and the pulse 85. There was a history of many years of indigestion, which had been worse of late; the pain had awakened him a few nights previously.

I thought that he was probably suffering from a perforated duodenal ulcer, and had him sent into the Worcester Infirmary. He was there operated upon by Mr. Gostling (who has kindly allowed me to publish the case); a pin-point perforation of the duodenum was found and was sutured. The perforation was covered with lymph, and was only found when this was cleared away. The appendix was next examined; it was found to be inflamed and was removed. The patient made an uninterrupted recovery.

Upton-on-Severn. C. P. Burd, M.R.C.S., L.R.C.P.

Reports
ON
MEDICAL AND SURGICAL PRACTICE IN HOSPITALS AND ASYLUMS.

DERBYSHIRE ROYAL INFIRMARY.

A CASE OF EMBOLISM OF THE SUPERIOR MESENTERIC ARTERY.

(By Francis L. A. Greaves, F.R.C.S., Surgeon to the Infirmary.)

On the afternoon of September 20th, 1913, I was called to the Royal Infirmary to see a man, aged 28, admitted for acute intestinal obstruction.

The history was as follows: Five days previously he was seized with colicky pains in the abdomen; this was at first not very bad, but becoming more acute he had to leave work. The bowels acted that night. His own doctor was summoned in the early hours of the following morning. From this time until admission there had been no evacuation of the bowels, except that two days before admission an enema was administered and a small result was obtained; no flatus was passed, however, and the symptoms were not relieved. There was no blood in the motion. Vomiting commenced about twenty-four hours after the pain was noticed, the vomit became a dark-coloured fluid before admission, and was regurgitant in character. There was no previous history of any abdominal trouble.

On admission he looked profoundly ill; he was a thin man, with rather a pale, sunken face. His pulse was feeble (80), respirations rapid (28), temperature 98°. He did not complain of great pain, but the whole abdomen was tender on palpation. His teeth were carious, his tongue furred but moist. The whole abdomen was distended enormously, there was no visible peristalsis, and the distension appeared uniform. On palpation the anterior abdominal wall was uniformly rigid, but not board-like, and as already mentioned tenderness was everywhere present. On percussion, well-marked shifting dullness was detected in both flanks and in the hypogastric region.

The provisional diagnosis of chronic tuberculous peritonitis, which had become acute, was made, and he was prepared for operation.

Operation.

An incision was made below the umbilicus in the middle line, and on the peritoneum being opened a very large amount of dark-green fluid, with a faintly faeculent odour, was liberated. The pelvis and flanks were full of this

fluid. Coils of small gut of the colour of damsons, and with the peritoneal coat cracked in places, were seen. In the right ileal region the coils were slightly adherent by freshly deposited lymph. No tubercles were seen or felt, and no mechanical cause for the obstruction was made out.

The mesentery was thick and tumid, and the coils of small intestine from duodenum to caecum were enormously distended. The caecum and ascending colon were markedly distended. The transverse colon was moderately distended, the splenic flexure, descending colon, pelvic colon and rectum were collapsed, but manipulation caused gas to pass along the lumen. No haemorrhages were present in the mesentery. The liver and gall bladder were normal, the latter being attached by fresh adhesions to the hepatic flexure. The stomach was distended, although he vomited just before the anaesthetic was commenced.

The diagnosis of thrombosis, or embolism of the superior mesenteric artery was made. A coil of ileum which was most congested was chosen, a Paul's tube inserted, and the bowel drained. The contents were bloodstained, and large amounts of fluid and gas were evacuated. Until this was done it was not possible to return the distended gut. None of the gut was actually gangrenous, but a large loop of ileum which was most affected was left out and covered over with protective. There was no line of demarcation between distended healthy gut and deeply engorged gut—the one merged gradually into the other. If I had thought it expedient to remove the doubtful gut, I should have had to remove the whole ileum, and nearly all the jejunum. The abdominal wound, which I had to enlarge, was closed down on to the protruded ileum. There was very much shock, which was treated by pituitary extract, rectal salines, posture, hot bottles, and wool, and bandages to all the extremities, but the patient died about eight hours later.

Necropsy.

At the necropsy on September 22nd *post-mortem* changes were marked. The thorax was carefully opened, and all the thoracic viscera were removed *en masse*. The oesophagus was dissected out and ligatured 4 in. above the diaphragm, the descending aorta being left *in situ*. The abdominal viscera, after being examined, were next displaced. The liver was removed; the portal vein contained much fluid blood. The whole intestinal tract from the cardiac orifice of stomach to the rectum was critically examined; except for distension and discoloration no abnormality was encountered until the coil of ileum which I had opened was reached; this proved to be about 2 ft. from the ileo-caecal valve. The coeliac axis was dissected out, and cut open; it was empty; the superior mesenteric artery was dissected out from the aorta to the formation of the arterial arcades in the mesentery; from the periphery to the aorta these were opened up. A pale non-adherent decolorized clot was found lying in the main trunk of the artery and partly in the aorta. When lifted out it measured nearly 3 in. in length. The inferior mesenteric artery was dissected out, opened, and found empty. The external and internal iliacs were examined and found empty, then the common iliac, and then the whole of the aorta was split up and the orifices of all the branches examined. No other clots were found anywhere (for example, in the superior mesenteric vein). The heart was next examined, and well-marked "vegetations" were found on the mitral valves, none on the aortic, although one aortic valve was distinctly roughened on its inferior aspect. No other emboli or infarctions were found.

The diagnosis, pending a microscopic report of the embolus, remains as: (1) Rheumatic endocarditis with vegetations of the mitral valves. (2) Embolism of the superior mesenteric artery. (3) Paralytic distension of the intestine and consequent obstruction.

The case related fulfils the picture drawn by Sir Berkeley Moynihan almost exactly, but there are a few slight points of difference.

1. *Onset.*—The patient was quite definite about the feeling of abdominal discomfort before the pain became acute. This, in the light of the *post-mortem* examination, is only what I should expect, since the distension, etc., must take a little time to develop. Again, the clot in my case was so flat *post mortem* that it is conceivable that the artery was not instantaneously completely plugged.

2. *Peculiar odour* of escaping fluid. This struck myself and Mr. Newth, my house-surgeon. It was certainly like the fluid found in the sacs of old strangulated hernias.

3. *No mesenteric haemorrhages* were found, but a good deal of solid oedema of the mesentery. This was very marked if contrasted with the great omentum.

4. *Age.*—The patient was a male, aged 28.

5. The possibility of relieving the condition was in my case practically *nil*, as he was already so collapsed, and such a large amount of intestine would have had to be removed.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

NORTH OF ENGLAND BRANCH: NEWCASTLE-UPON-TYNE DIVISION.

The first of the winter scientific demonstrations of the Newcastle-upon-Tyne Division of the British Medical Association was held at the College of Medicine on Thursday, November 20th, at 3.30 p.m.

Abdominal Emergencies.—Professor Morison made a communication on abdominal emergencies, with especial reference to the so-called "triphasic symptom complex," which will be published in full.

Demonstration of Wassermann's Test. — Professor Hutchens, who followed Professor Morison, gave a demonstration of Wassermann's test for syphilis. He traced the origin and employment of this test in detail and remarked on its practical worth.

Acidosis.—A quarter of an hour's interval then ensued for tea, after which Professor Bainbridge delivered a paper on acidosis in diabetes and other diseases. He drew attention to the fact that whenever a healthy person is deprived of food or is placed on a diet containing little or no carbohydrate, beta oxybutyric acid and i s products (diacetic acid and acetone) make their appearance in the urine. This condition, which is known as acidosis, is due to the fact that when the amount of carbohydrate in the body is deficient the final stages of the oxidation of fat in the tissues are incomplete. Acidosis, he continued, implied carbohydrate starvation, and its recognition was of great importance in clinical work. It was present not only in diabetes but was of frequent occurrence in pregnancy and in many conditions of malnutrition in children; in such cases acidosis furnished an indication that more carbohydrate must be added to the daily dietary.

Pathological Demonstration.—Dr. W. T. Sewell then gave a demonstration on some recent pathological specimens.

This closed the proceedings for the day, at which one hundred and twenty medical practitioners from all parts of the North of England were present.

The annual meeting of the subscribers to the *Magazine* of the Royal Free Hospital (School of Medicine for Women) will be held at the Medical School, 8, Hunter Street, W.C., on Thursday, December 11th, at 4.30 p.m. All subscribers are invited to be present.

The American Association of Immunologists was formally constituted at Minneapolis, Minnesota, on June 19th, with a membership of forty-one former pupils of Sir Almroth Wright. The objects of the society are: To unite the physicians of the United States and Canada who are engaged in the scientific study of immunology and bacteriotherapy; to study the problems of immunology, to promote by concerted efforts scientific research in that department, and to spread a correct knowledge of vaccine therapy and immunology among general practitioners. The officers temporarily chosen are Dr. Gerald D. Webb, of Colorado Springs, President; Dr. George W. Ross, of Toronto, Vice-President; Dr. Willard J. Stone, of Toledo, Ohio, Treasurer; and Dr. Martin J. Synnott, of Montclaire, New Jersey, Secretary. The first annual meeting will be held on June 1st, 1914, in Atlantic City, New Jersey, where the American Medical Association will hold its annual meeting at the same time.

Reports of Societies.

MEDICAL SOCIETY OF LONDON.

AT a meeting on November 17th, Sir DAVID FERRIER, President, in the chair, Dr. J. B. MENNELL, continuing the discussion on the *Treatment of neurasthenia* commenced on November 10th, said that the dose of massage must be prescribed with care and accuracy; that only the most gentle movements should be performed; that any tender or hypersensitive point was the last that should receive attention; and that the massage movements should be rhythmical. Dr. CLAUDE FOTHERGILL considered that at the outset a prolonged period in bed was invaluable, and should be accompanied by feeding to excess if the patients had wasted. Massage should be employed in all cases, and when ordinary massage did not suit the type known as effleurage should be used. Galvanic and faradic electricity were useful. Suggestion had to be employed throughout the whole treatment. For insomnia he recommended medinol in gradually decreasing doses, and paraldehyde occasionally for undue restlessness. Dr. S. A. K. WILSON said it was important to separate from cases of neurasthenia attacks of vaso-vagal origin. Such could be cured completely by drugs which acted upon the vasomotor system, especially nitro-glycerine. Dr. JAMES STEWART thought that neurasthenia was more favourable in its course in male subjects than in female. Dr. W. P. S. BRANSON dealt especially with cases in which the physical element was pronounced. Very low blood pressure, diminished acidity of the tissue fluids, metabolic accumulations, hyperchlorination, intestinal toxaemia, and faulty correlation of internal secretions, each constituted an adequate cause. Mr. ERNEST CLARKE thought it important to correct slight degrees of astigmatism or heterophoria. Dr. G. E. SHUTTLEWORTH dealt especially with neurasthenia in school children, and pointed out the importance of educating them in special or intermediate schools. Dr. J. CURTIS WEBB advocated the use of static electricity. The PRESIDENT said that the important thing was to improve the general *moral*. For this psychotherapy was the essential treatment. All other measures were merely adjuncts. Dr. RISIEN RUSSELL replied.

ROYAL SOCIETY OF MEDICINE.

PATHOLOGICAL SECTION.

AT a meeting on November 18th, Dr. LAZARUS BARLOW, Vice-President, in the chair, Dr. A. WARREN CROWE maintained that the organism described previously as the staphyloid coccus A, and isolated from the urine in a large proportion of cases of *Rheumatoid arthritis*, was the primary cause of those forms of arthritis conforming more or less strictly to typical primary polyarticular disease, characterized by fusiform swelling and redness of the joints, frequently symmetrical in character, usually commencing in the fingers, and associated with glossiness of the skin and muscular degenerations and contractures. The organism was one of the common inhabitants of the human skin, and the name proposed for it was *Micrococcus deformans*. The evidence produced fell chiefly under three headings: (1) The incidence of the *M. deformans* in the urine—77.5 per cent. (2) The results of complement and agglutination reactions (two separate series of blood specimens being tested by an independent worker with no knowledge of the sources of the serums). (3) Opsonic data; it being shown by means of charts that in response to a medium dose of *M. deformans* vaccine given to a patient suffering from frank rheumatoid arthritis a typical immunity curve developed (no fluctuation occurred in the index of a normal person after an experimental dose of the vaccine). The author considered that the fact of pathogenic organisms such as streptococci and *B. coli* being found in local foci of infection in cases of rheumatoid arthritis, and the fact of such cases having been not infrequently cured by vaccines of these germs, were not proof that the disease could be caused by a number of different germs, but only that such germs might be present as a mixed secondary infection, and constituted a similar phenomenon to that seen in phthisis. The fact that this organism (or, in fact, any other organism) had not been found in the diseased joints might be explained by the suggestion that the arthritis itself was of the nature of a tropho-neurosis, for a large proportion of cases of rheumatoid arthritis, if not all, were preceded by or associated with an attack of neuritis. From the incidence of the *M. deformans* in the urine and the results of serum tests, it appeared that neuritis and rheumatoid arthritis were identical diseases, caused primarily by that organism. Spinal lesions had frequently been described in cases of rheumatoid arthritis. Dr. MINETT (in a paper read by Dr. EYRE) discussed the pathogenicity of an organism isolated from non-ulcerating cancerous growths, and drew the following conclusions: (1) The *Micrococcus neoformans* is identical with that type of *Staphylococcus albus* which can be isolated from deep tissues of human beings or animals. (2) This is the ordinary skin staphylococcus modified by growing for considerable periods on tissues where oxygen is absent or scanty. (3) An aërobic growth of skin staphylococci gradually assumes the character of *M. neoformans*. (4) Serum from cancer patients does not possess specific agglutinins for *M. neoformans* in a greater degree than does normal serum. (5) Cancer patients do not react to vaccine treatment with this organism. (6) The temperature of cancer patients is not affected by large doses of vaccine, nor can specific opsonins be detected. Dr. ARKWRIGHT gave an account of some experiences on the subject of the production of *mutation forms* of diphtheria, typhoid, and other bacteria.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

AT a meeting on November 7th, Dr. F. S. PALMER in the chair, the following were among the exhibits:—Dr. F. S. PALMER: (1) A case of *Pseudo-hypertrophic paralysis* in a child, aged 7, the elder of two children, both boys. He began to walk at 2 years of age, but was unsteady on his legs, fell frequently, and always had great difficulty in ascending stairs. There was no history of familial nervous disease, but the younger brother, aged 6, was similarly affected. (2) A case of *Congenital morbus cordis* in a woman, aged 22. She had always been blue as long as she could remember. She had acute rheumatism when aged 17, and a second attack two years later. In March, 1912, she suddenly developed left-side hemiplegia. Drs. A. SAUNDERS and MORTON: Six cases of *Early pulmonary tuberculosis* in children between the ages of 5 and 10. They showed no physical signs on examination of the lungs, but exhibited wasting, irritable cough, and night sweats. Dr. Morton's skiagrams showed very clearly enlargement of the glands at the root of the lung, and also a greater or less invasion of the root of the lung itself in every case. Dr. RUSSELL STEELE (for Dr. A. SAUNDERS): A case of *Congenital syphilis* in a child aged 12. There was symmetrical swelling of the knee-joints and a history of a rash on his legs and buttocks lasting three months, one year ago. The mother gave a positive Wassermann reaction, and the child's reaction was also strongly positive. On October 16th 0.45 gram salvarsan was given intravenously, but no improvement had since occurred. Dr. SAUNDERS: A case of *Congenital dilatation of capillaries* in a child aged 7. There had been exaggerated mottling of the skin ever since birth. Mr. ASLETT BALDWIN: (1) A case of *Traumatic asphyxia* and haemorrhage into the cervical cord in a man aged 26, who was admitted to hospital on October 28th, after being crushed between a lift and a balance weight. He was unconscious, breathing laboriously, pulse very weak. Several ribs on the left side were broken, and there was an enormous degree of surgical emphysema on the left side of chest, abdomen, and back. His pupils were dilated and very sluggish, and his colour very blue. On the 29th he began to regain consciousness, but the emphysema continued to spread. His sputum was slightly blood-stained. On the 30th he regained consciousness, the emphysema was disappearing, and there was much muco-purulent sputum tinged with blood. As the general blueness disappeared it was apparent that there was a permanent blueness of the skin of the face and neck, and also haemorrhages into the conjunctivae of both eyes. Marked weakness and loss of reflexes in all the muscles supplied from the brachial plexus was still present, but entire recovery was expected. (2) A case in which *Implantation of rib* was performed. Mr. BISHOP

Harman: Some cases of *Syphilitic uveitis*, one in a young child showing interstitial keratitis. The disease had progressed in spite of all treatment. Dr. Grainger Stewart: (1) A case of *Syphilitic disease of the cervical spine* with sensory symptoms, referred to the distribution of the upper cervical root areas, in a man aged 45. The patient had had syphilis seven years ago, which was not treated, and eighteen months ago fell from a cart on the back of his head. For the last twelve months pain had gradually developed in the upper cervical areas of the left side. *X*-ray examination showed changes in the upper cervical spine, some destruction of the bodies of the vertebrae, and considerable overgrowth and new formation. The Wassermann reaction was strongly positive. (2) A case of *Abdominal tuberculosis* in a boy, aged 13, who on March 6th was sent to a convalescent home at Highgate, where rapid improvement occurred. He was soon able to get up and remain out of doors all day, and there was remarkable increase in weight, this having now risen from 60 lb. to about 90 lb. Mr. Tyrrell Gray: (1) A case of *Sarcoma of a keloid* on the eyebrow in a child aged 3; (2) a case of *Implantation dermoid* following circumcision in a child aged 8.

LIVERPOOL MEDICAL INSTITUTION.

At a pathological meeting on November 13th, Mr. F. T. Paul in the chair, Mr. K. W. Monsarrat and Dr. I. J. Williams, in a paper on *Intramural extension in rectal cancer*, presented the results of complete histological examination of the specimens derived from four cases of operation for rectal cancer. The specimens were cut in serial sections, and the staining method employed was mucicarmine and haematoxylin. It was considered that it was incorrect to look upon mucin as a degeneration product or its presence indicative of growth ineffective from the point of view of metastases. It was shown in the observations reported that infiltration was widest in the planes of the longitudinal muscular coat and the cellular tissue outside it. No permeation of lymphatic plexuses to a distance beyond the primary site was demonstrated. In particular it was not found that permeation took place in the plane between the bases of the follicles and the muscularis mucosae. In one of the specimens it was shown that the growth was present within the venules in the muscular coat and the adventitia. The specimens were representative of the commonest type of rectal cancer—a fibrous stenosing carcinoma. They went on to show that the disease remained local for a considerable period, that glandular invasion might be considerably delayed, and that longitudinal extension in the rectum was not rapid and wide, but comparatively slow and restricted. The authors considered that while abdomino-perineal amputation was the operation of choice for carcinoma, resections and amputations less extensive than this procedure offered fair prospects of cure, and that it was therefore justifiable to undertake such operations when for any reason a complete amputation appeared to be contraindicated. Professor Ernest Glynn analysed 50 *post-mortem* examinations on patients who had died from cancer of the large intestine in the Royal Infirmary. The rectum was affected in 20 and the pelvic colon in 10 cases. Metastases other than those in the lymphatic glands in the neighbourhood of growth were present in only 19 cases. Thirty died from peritonitis, including cellulitis or abscess formation. In 9 there was acute ulceration of the intestine at some distance from the stricture. Dr. Blair Bell observed that ovarian carcinoma sometimes invaded the rectum to such an extent as to make it difficult to decide at operation which was the primary growth. Histological examination usually made this question clear. The following were among the exhibits: Mr. R. W. Murray: The amputated leg of a woman, aged 50, suffering from *Elephantiasis*; it weighed 64 lb. The patient had never been out of this country, and had carried on her work as a washerwoman up to the time of her admission to hospital. Mr. Kelly and Professor Ernest Glynn: Some specimens from three cases of abdominal trauma, which included a ruptured liver. Mr. Kelly considered that the rectus aponeurosis was the best material to use for suturing the liver; this material did not cut through. Dr. Abram and Professor E. Glynn: A specimen of *Polypoid colitis* in a girl, associated with chronic diarrhoea. One portion had developed into columnar cancer with metastases in the liver. Dr. Nathan Raw: A specimen of *Acute tuberculous pericarditis* from a patient aged 30, secondary to miliary tuberculosis of the lungs. During life 40 oz. of fluid were withdrawn by paracentesis with marked temporary benefit. Mr. Douglas Crawford: A *Foreign body* (a brooch) removed from the intestine. Cotton-wool had been administered and the brooch had been passed wrapped up in it. Mr. R. C. Dun: A microscopical section of *Congenital fibroma* of the finger, removed from an infant 9 weeks old. The tumour was the size of a cherry, pedunculated, and grew from the palmar surface of the digit.

UNITED SERVICES MEDICAL SOCIETY.

At a meeting on November 13th, Colonel B. Skinner, President, in the chair, Surgeon Campbell Ross, R.N., in a paper on *Pulmonary tuberculosis in the Royal Navy*, pointed out that the disease was not an uncommon one in the navy. The number of invalidings for this disease in 1911 were 2.02 per 1,000, but showed a yearly decrease. In the years 1856 to 1860 the average annual invalidings were 5.4 per 1,000. In his consideration of its further reduction he pointed out the importance of efficient ventilation, the early diagnosis of cases, the invaliding out of the service of men affected with pulmonary tubercle (already a routine procedure in the Royal Navy), and of careful examination of recruits on entry. Tuberculin treatment as carried out at the Royal Naval Hospital, Chatham, had in suitable cases given excellent results.

Reviews.

FLORENCE NIGHTINGALE.

The life of Florence Nightingale is much more than the life of an individual. It comprises to a large extent the record of the immense improvement in nursing which took place, it may be said roughly, within the period covered by the reign of Queen Victoria. It must be clearly understood that Miss Nightingale, great and far-reaching as her work undoubtedly was, was not the pioneer of nursing reform. Her name became the symbol of that reform in the public mind, and those who had preceded her were overshadowed by the national fame which quite deservedly came to her at the time of the Crimean war. The debt which the nursing profession, and those who benefit by it, owes to her cannot indeed be over-estimated. But the fact remains that she followed in the footsteps of predecessors and contemporaries who had been before her in the field. The success which she achieved in the Crimea was largely due to her own personal qualities; but it must also be admitted that it was partly due to her social position and to the influence which she was able to bring to bear upon officialdom by her friendship with men in high places. Had it not been for this, all her devoted efforts, like those of so many other charitable women and philanthropic men, would have broken themselves against the rock of official indifference, and vanished as ineffectual foam.

The definitive biography of Florence Nightingale has now been written by Sir Edward Cook,[1] who has had access to the vast accumulation of papers which she left behind. Use has also been made of her published *Notes on Hospitals* and *Notes on Nursing*, and other works relating to those subjects, together with her privately circulated *Addresses to Probationers*, and of her privately printed *Suggestions for Thought* which gave the key to her inner life. A legend grew up around Florence Nightingale and encompassed her in a halo which hid her true personality. Had she lived in the Middle Ages she would inevitably have been venerated as a saint. This was the impression made by her work and character not only on ignorant but grateful soldiers, but on many of those who knew her well. Sir Edward Cook says:

> The popular imagination of Miss Nightingale is of a girl of high degree who, moved by a wave of pity, forsook the pleasures of fashionable life for the horrors of the Crimean war; who

[1] *The Life of Florence Nightingale.* By Sir Edward Cook. In two volumes. Vol. I, 1820-1861; Vol. II, 1862-1910. London: Macmillan and Co. 1913. (Med. 8vo, pp. 538 and 524. 30s. net.)

went about the hospitals of Scutari with a lamp scattering flowers of comfort and ministration; who retired at the close of the war into private life and lived thenceforth in the seclusion of an invalid's room—a seclusion varied only by good deeds to hospitals and nurses and by gracious and sentimental pieties.

The growth of this legend was favoured by Miss Nightingale's own shrinking from publicity, and by her extreme reticence about herself. Although there were some elements of truth in the legend, the real Florence Nightingale was very different from the legendary one and a greater woman than the Lady of the Lamp. She was indeed a ministering angel in the Crimea, but before all she was an administrator of the first order, and an eager, perhaps somewhat impetuous, reformer of all manner of evils and especially of the red-tape bound formalism into which the departments of Government controlling the army had become fixed as the result of the canker of a long peace. Queen Victoria was struck by her clear head, and wished they had her at the War Office. Some of those who worked with her were struck by a certain hardness in her, but this was due not to want of heart, but to her hatred of inefficiency, her strong sense of discipline and her impatience with routine which paralysed initiative. To understand her achievement one must know the state of nursing when she took up the care of the sick as her life-work. Mrs. Elizabeth Fry had turned from labours to better the condition of prisoners to attempt the improvement of hospital nursing, but though the good seed had been sown the harvest was not yet. Nurses were still drawn from a low class, and the career was deemed quite unfit for a lady. Miss Nightingale met with strong opposition from her own family when she wished to obey the call she felt within her. As Lord Stanley (afterwards fifteenth Earl of Derby) well said at a meeting in support of the Nightingale Fund held in Manchester on January 17th, 1856:

> It is not easy, especially in England, to set about doing what no one has done before. Many persons will undergo considerable risks, even that of death itself, when they know that they are engaged in a cause which, besides approving itself to their consciences, commands sympathy and approval, when they know that their motives are appreciated and their conduct applauded. But in this case custom has to be violated, precedent broken through, the surprise, sometimes the censure, of the world to be braved. And do not underrate that obstacle. We hardly know the strength of those social ties that bind us until the moment when we attempt to break them.

That Miss Nightingale did break the bonds of convention and prejudice is the highest proof of her greatness. She prepared herself carefully for her work, studying the organization of hospitals, the methods and spirit of Sisters of Charity and other nursing religious orders, and of the Deaconesses at Kaiserswerth on the Rhine, where Pastor Fliedner, who had been impressed by the work of Mrs. Fry, had established, among other charitable institutions, a hospital intended as a training ground for nurses. Her active career began as superintendent of an establishment for sick gentlewomen in Harley Street. There she learnt how to deal with refractory committees, how to get doctors to co-operate with her, and how to manage a hospital at once efficiently and economically. Sir Edward Cook says: "What was afterwards to characterize her work in a larger field was already observed in Harley Street. It was the combination of masterful powers of organization with womanly gentleness and sympathy." To these qualities it must be said she added great tact and diplomacy, and a capacity for wirepulling which were afterwards to stand her in good stead. When the call to the Crimea came Miss Nightingale was prepared for the work. The hospitals were in a state of chaos, and the most elementary necessaries for the treatment of sick and wounded men were lacking. For this state of things the medical officers have been held accountable, and Miss Nightingale, who believed herself to be thwarted by them out of jealousy, said hard things of some of them. Toward Sir John Hall, chief of the medical staff, indeed, she displayed an animosity which sometimes found angry and even spiteful expression. Her friend, Sidney Herbert, then Minister for War, at whose urgent request she went to the Crimea, thought it needful to expostulate with her about the bitterness with which she complained of the obstructiveness of the medical staff. He wrote:

> You have been overdone with your long, anxious, harassing work. You see jealousies and meannesses all round you. You hear of one-sided, unfair, and unjust reports of your proceedings and of those under you. But you overrate their importance, you attribute too much motive to them, and you write upon them with an irritation and vehemence which detracts very much from the weight which would attach to what you say.

It is certain that if the medical officers to some extent resented the intrusion of what was known as the "Nightingale power," she on her part did not make sufficient allowance for the difficulties they had to meet. Sir Edward Cook says that to him, after much reading of the documents, it seems that Hall was the victim of a false position: "He had been appointed Medical Inspector-General in the Crimea when he was still in India, and he did not arrive on the scene in time to think out the preparations properly." This, we think, shows a very inadequate appreciation of the state of affairs. The fault lay with the system which prevailed at the War Office. The Director-General of the Medical Service of the Army was subordinate to at least five departments of State, between which there was no proper co-ordination.

> Although he might be wanting supplies kept in store by another Department he could not go thither straight in order to lodge his requisition, but had to set it travelling circuitously, and begin by a prayer to the Horse Guards.[2]

Moreover the Medical Department was by an ill-judged economy starved in numbers, and controlled by a discipline particularly as regards expenditure, which made it incapable of independent action when an emergency arose.

> Thus if the Director-General of the Army Medical Department wished to furnish to our hospitals in the East some kinds of supplies, as, for instance, wine, sago, arrowroot, he had to send his purpose revolving in an orrery of official bodies; for first he well knew he must move the Horse Guards, and the Horse Guards must move the Ordnance, and the Ordnance must go to the Admiralty, and the Admiralty must give orders to its Victualling Office, and its Victualling Office must concert measures with the Transport, and the Transport Office (having only three transports) must appeal to our private shipowners in the hope that sooner or later they would furnish the sea carriage needed; so that the original requisition becoming at last disentangled might emerge after all from the labyrinth and—resulting in an actual visible shipment of wine, sago, arrowroot—begin to receive fulfilment.[3]

The Director-General had in May, 1854, submitted schemes for dealing with the sick and wounded at the establishment hospitals, but they were unheeded. The calamities that followed were due to the fact that the Director by the system was a servant when he should have been a master. This is the secret of efficient medical administration which has not even yet been fully recognized by statesmen.

One of Miss Nightingale's chief difficulties in the East was the unwillingness of the military mind to accept the idea of women nursing soldiers. It was a novelty, and the "Bird," as she was called in camp, was scoffed at by old campaigners who remembered their own rough experiences in the Peninsula. It would be foolish at this time of day to raise the ghosts of old quarrels—administrative, medical, theological, and personal. Sir Edward gives an account of them in which he strives hard to hold the balance, but there are not a few traces in his book of what Macaulay calls the *lues biographica*. His narrative should therefore be supplemented and corrected by evidence from other sources. All these furnish testimony to the greatness of the work which Miss Nightingale did, but they show, too, that others did much which was overlooked at the time and has since been forgotten.

What was the secret of the "Nightingale power"? Sir Edward Cook says it was due to causes of which some were inherent in herself and others were adventitious. "The inherent strength of her influence lay in the masterful will and practical good sense which gave her dominion over the minds of men. The adventitious sources of her power were that she had both the ear and the confidence of Ministers and the interest and sympathy of the Court." With the fullest admiration of her intellect and energizing power, we think most people will agree that unless she had been the personal friend of the Minister in whose hands were the destinies of the British army at the time, she might never have been allowed to undertake her mission of mercy; or, if she had, she would have had,

[2] Kinglake's *Invasion of the Crimea*. Abridged by Sir G. S. Clarke. Quoted in S. M. Mitra's *Life and Letters of Sir John Hall*. London, 1911, p. 525.

[3] Quoted in *Life and Letters of Sir John Hall*, p. 526.

like so many other spirits burning with the ardour of reform, to retire baffled and heart-broken from a contest with official inertia and ineptitude.

Miss Nightingale's health broke down under the strain of the Crimean burden, and for the rest of her life she was more or less an invalid. But she was as active from her sick-room as she had been in the hospital at Scutari. On her return to England she set about reforming the medical administration of the army and raising nursing to the rank of a trained profession. Through Sidney Herbert she got a Royal Commission appointed to inquire into everything relating to the health of the troops. Her diplomatic genius showed itself in the way she packed the Commission, coached Ministers and members of Parliament, and inspired the press. Never showing herself, she was the moving spirit, ever ready to supply facts from her own experience, statistics of which she was passionately fond, plans for hospitals which should not be death traps, and schemes of all kinds for the benefit of the soldiers, whom she always called her "children." Needless to say she met with determined opposition, and sometimes she was defeated by the forces of routine, but she did not lose heart. If military hospitals at the present day are immensely better than they were fifty years ago, the credit is largely due to Miss Nightingale. To her is also due the idea of an army medical school, and the first professors, including Edmund Alexander Parkes with whom she became acquainted in the Crimea, were chosen by her. It is doubtless true that she got credit for many things with which she had nothing to do, but that very fact shows the impression her work had made, for *on ne prête qu'aux riches*.

The Nightingale School was a direct outcome of Miss Nightingale's work in the Crimea. A sum of £44,000 was raised as a tribute to her from the British army. The soldiers subscribed generously, but the doctors as a body held aloof. Mr. J. F. South, Senior Surgeon to St. Thomas's Hospital, with which it was proposed to connect the school, wrote:

> That this proposed hospital nursing training scheme has not met with the approbation or support of the medical profession is beyond doubt. The very small number of medical men whose names appear in the enormous list of subscribers to the fund cannot have passed unnoticed. Only three physicians and one surgeon from one (London) hospital and one physician from a second, are found among the supporters.

Nevertheless the scheme was carried to fulfilment, and on June 24th, 1860, the Nightingale Training School for Nurses was opened. If we cannot accept Sir Edward Cook's description of her as the "founder of modern nursing" without considerable reservation, it is certain that without her impulse and direction the movement would not have proved so successful as it has been.

The death of Sidney Herbert in 1861 deprived Miss Nightingale of her most powerful means of exerting political influence. She did much work after that for sanitary reform in India, for the reform of workhouse infirmaries, and—to use the words of Sir Edward Cook—as "adviser general" on hospitals and nursing. When she died in 1910, at the age of 90, she had accomplished a work such as no woman and very few men have accomplished. As her biographer says, she was by no means a plaster saint. "She was a woman of strong passions, not over given to praise, not quick to forgive; somewhat prone to be censorious, not apt to forget." She was not a sentimentalist, and holy simplicity was less conspicuous in her than adroitness in practical affairs. Above everything, she hated unbusinesslike methods. She was impatient of opposition, but this was the necessary outcome of her eagerness to reform. Her teaching and example did much to show women how and where they might find a larger sphere of usefulness than the conventions of the mid-Victorian period allowed them. Altogether it was a life of the highest nobility, combining the loftiest ideal of personal holiness with utter devotion to the welfare of humanity. Sir Edward Cook has enshrined the memory of Florence Nightingale in a literary monument worthy of her; there could be no greater praise.

THE ENDOCRINE GLANDS.

THE study of the physiology and pathology of the glands producing internal secretions, begun by Claude Bernard as long ago as 1855, occupies a larger place in medicine every year. The rapid progress that is being made in the study of the functions of these endocrine glands was admirably illustrated by the discussion that took place last August, at the joint meeting of the Sections of Physiology and of Medicine of the Seventeenth International Congress of Medicine. Most interesting and illuminating papers were read, and speeches were made, at this meeting by Kraus, Gley, Biedl, Herring, Falta, Swale Vincent, and many others. Quite recently Professor NOËL PATON, of Glasgow, has published a book[4] that was in print a couple of months before the Congress met in London, in which he gives a first-rate summary of knowledge about the secretions of the glands. It is always interesting to come across a volume that deals largely with medicine, and has been written by a man of science who has made his name in a different branch of research; Professor Noël Paton is a physiologist, and his book is not only interesting but also highly profitable reading for the medical man. It takes the form of a series of well documented chapters in which the known facts about the endocrine glands and their secretions are briefly but thoroughly set out. Many of the probable, doubtful, and still unproven facts and theories are also given, with their *pros* and *cons*, and a conservative estimate of their value in each case.

The subject, speaking generally, is one that has suffered from overspeculation and premature theorizing for many years, chiefly at the hands of medical men. Professor Noël Paton's book comes as an excellent and much-needed corrective for this exuberant tendency to the formation of baseless hypotheses, and so is doubly welcome—firstly for its matter, secondly for its style. The early part of it discusses the question how far it is the nervous system that directs embryonic growth, and how far it is hereditary inertia, the inborn tendency to undergo the same course of development as its progenitors, that influences the growing embryo. No universal rule can be laid down. Experimental physiology has shown that at some stage in development, varying in different animals and in different tissues of the same animal, the nervous system comes to play a most important part in regulating the metabolism on which development, growth, and repair depend.

The greater part of the book is devoted to the chemical influences exerted by the secretions of the endocrine glands. The author classifies them embryologically. The nervous or posterior lobe of the pituitary body, and the chromaffin tissue of which the suprarenal gland is a type, are derived from the nervous system; from the buccal cavity the thyroid and anterior lobe of the pituitary are developed; the intestine gives rise to the pancreas and the mucosa of the small intestine; the parathyroids and thymus come from the branchial arches; and the mesothelium of the genital ridge gives rise to the sexual glands (or gonads), and to the interrenal bodies that form the cortex of the suprarenals. The last thirty pages are given to the relations of the endocrine glands to each other and to the nervous system, and to their evolution. The book may be cordially recommended to all who are interested in the present state of knowledge about these glands. It is short yet complete, and contains very little that the reader will have to unlearn. It is perhaps most valuable on account of the moderation and the duly cautious scientific spirit in which it has been written.

TREATMENT OLD AND NEW.

THE great advances that have been made in pathological observation and physiological research have not as yet led to the abandonment of former methods of treatment. Hence we find that a new edition, the fifth, of so well-established a work as BURNEY YEO'S *Manual of Medical Treatment*[5] does not grow less in bulk by the omission of therapeutic systems which to some might appear obsolete. The sum of common experience must in the long run determine the usefulness of any drug or system, and the most brilliant results obtained by the few will not suffice

[4] *The Nervous and Chemical Regulators of Metabolism: Lectures.* By D. Noël Paton, M.D., B.Sc. London: Macmillan and Co. 1913. (Demy 8vo, pp. 227; 8 figs. 6s. net.)

[5] *A Manual of Medical Treatment.* By I. Burney Yeo, M.D., F.R.C.P., Emeritus Professor of Medicine in King's College, London. Fifth edition by Raymond Crawfurd, M.A., M.D.Oxon., F.R.C.P., Physician to King's College Hospital; and E. Farquhar Buzzard, M.A., M.D.Oxon., F.R.C.P., Physician for Out-patients, St. Thomas's Hospital, etc. In two volumes. London: Cassell and Company, Ltd. 1913. (Cr. 8vo, pp. 849 and 853; 19 and 5 figs. 25s. net.)

to establish popularity if the same results are denied by the many. It follows that many old lines of treatment still hold the field, although apparently worthless from the scientific point of view. Knowledge of the action of drugs is of necessity incomplete, and for all practical purposes we must be content with empirical information culled, of course, from the best sources. In this latest edition, which is almost entirely the work of the sub-editors, Drs. CRAWFURD and BUZZARD, the needs of the practitioner have been constantly considered, and the two bulky volumes contain a vast amount of useful instruction set forth in readable style and embodying the most recent as well as the most time-honoured accounts of treatment in general. The writers make no secret of their own views, while doing full credit to those of others. This is well shown in every section of the work where vaccine treatment comes under consideration. Personal experience leads them to adopt very guarded opinions as to its ultimate value from the patients' point of view. Readers who may have had a more encouraging experience will doubtless maintain that too cautious and pessimistic a survey is taken of the whole subject, but the writers of a textbook must needs weigh evidence on both sides, and the verdict thus far is equivocal. The therapeutic value of *x*-ray medication is still on its trial, and at the present day the enormous numbers of "treatments" which are administered would seem to indicate that time, as well as electricity, must be a factor in the "cure." Among many recent innovations the use of direct medication of the atonic or dilated stomach may be mentioned; it remains to be seen whether sufficient relief is ultimately afforded to warrant the general adoption of such disagreeable and often painful procedures. The new edition is brought up to modern requirements in every department, and will, as heretofore, be found constantly useful as a work of reference wherein to find information on everything that bears upon practical treatment, whether advocated by home or foreign authority. It will be inferred from what has been said that it does not of necessity extol the newest methods, nor does it omit to make mention of some of the oldest.

Sir JAMES SAWYER is to be congratulated upon the success of his *Contributions to Practical Medicine*.[6] It was first published in 1886, and the fifth edition lies before us. Merit and success do not always go together, even in medical literature, but it is not difficult to understand why they have done so in this case. The author writes excellent English, free from pedantry, and dignified without heaviness. The manner of the book is as pleasant as the matter is learned and instructive. Moreover (and this point is worthy of special mention) Sir James Sawyer feels and therefore inspires confidence in the methods and remedies of which he writes. He maintains a positive and affirmative attitude in regard to therapeutics. After all, it is of the power not of the impotence of drugs that we want most to hear, for we have to do the best we can with such weapons as lie ready to hand. The subjects dealt with in this volume are eminently calculated to appeal to the interest of the busy practitioner. The causes of insomnia, the treatment of insomnia, the treatment of gastralgia, floating kidney, the treatment of habitual constipation, lumbago coprostatica, the treatment of eczema, fuming inhalations in asthma—such are a few chosen at random from among the chapters of the book. Upon all these matters, and upon many others, Sir James Sawyer has new and valuable information to impart. It may safely be prophesied that further editions will be called for in due course.

NOTES ON BOOKS.

DR. A. S. GUBB, who practises in Algiers in the winter, has photographed a book, if this use of the verb may be allowed, on the flora of the country. In 270 pages it contains upwards of 220 reproductions of photographs of plants and flowers. The general plan is to give under the photograph a description of the plant with its botanical name and order, and the common names in Arabic and Berber and half a dozen European languages in those cases in which plants are so generally known as to possess such popular appellations. Algeria has been called the land of flowers, and though Dr. Gubb's volume[7] does not profess to be complete, containing as we understand only those plants most commonly seen, it gives a convincing impression of the richness and variety of the flora. Few of the plants are seen north of the Mediterranean save in greenhouses, and even those which can resist the climatic conditions of Europe in the open air do not there attain the richness and fullness they reach in Algeria. In the southern Sahara all plants have a struggle for existence, and present many interesting adaptations to their arid surroundings. In many the foliage is small, evaporation being thus prevented, and some send out roots vertically into the soil to almost incredible depths. The desert may appear at certain seasons of the year a sterile plain, but after rain or where irrigation water is supplied by artesian wells, the soil quickly becomes covered with gay flowers. Prefixed to the pictures is an index of leaves designed to help the inquirer to identify the plants he sees. The plan does not seem to have been employed before in a popular work, and although not, of course, strictly scientific, it will commonly afford a useful clue. The photographs must sometimes have been obtained by the author with no little difficulty, and at the cost of expeditions not without their perils.

The British Guiana Medical Annual for 1912[8] contains papers upon dysentery, enteric fever, granuloma pudendi, tuberculosis, the causes of enteric fever, and dermal leishmaniasis, on cases treated by the open iodine method, and clinical notes. The transactions of the British Guiana Branch of the British Medical Association for 1912–13 are also published in it. Many of the papers are worthy of careful study, especially those on the parasite of granuloma pudendi by Wise, and on dermal leishmaniasis by Minett. It is interesting to note that the forest yaws of the old days is a form of leishmaniasis. The high standard reached by previous issues is well maintained.

Dr. F. TRUBY KING, lecturer on mental diseases in the University of Otago, has written for the New Zealand Society for the Health of Women and Children, of which he is president, a book which, though it deals with a somewhat hackneyed subject, treats it with so much freshness that it will, we do not doubt, make a strong appeal to the public. It is entitled *Feeding and Care of Baby*.[9] It is very copiously illustrated, and seems to deal very fully with every aspect of the subject. After a kind of tabular summary headed "What every baby needs (whether well or ill)," which would make a good leaflet, the book opens with sections on natural and artificial feeding; then comes a section on feeding in the second year, in which there is a preliminary discussion of the importance of mastication; the next section is on general hygiene, and the next on cleanliness and the prevention of fermentation. There is an excellent set of notes on the interpretation of cries, followed by a list of popular errors, which are further elaborated in other parts of the book. A series of notes on various disorders of infancy, including vomiting and diarrhœa, is succeeded by further observations on the care of the teeth, and in an appendix there is a short note on "motherhood and half motherhood in hot climates." Dr. Truby King declares that the common idea that European mothers ought not to nurse their babies in very hot countries "is sheer nonsense." All through the book he is careful to impress on his readers the importance of following nature not only in the feeding, but in the general management of infants.

[6] *Contributions to Practical Medicine.* Fifth edition. By Sir James Sawyer, M.D., F.R.C.P. Birmingham: Cornish Bros. 1913. (Post 8vo, pp. 410. 5s. net.)

[7] *La Flore Algérienne.* By Dr. A. S. Gubb of Algiers. Alger: Jourdan. London: Baillière, Tindall and Cox. 1913. (Fr.7.50.)

[8] *The British Guiana Medical Annual for 1912.* Edited by K. S. Wise, M.B., B.S., B.Sc.(Lond. Univ.), D.P.H., M.R.C.S., L.R.C.P. Letchworth: Garden City Press, Limited. 1913. (Demy 8vo, pp. 140. 5s.)

[9] *Feeding and Care of Baby.* By F. Truby King, M.B., B.Sc. (Public Health) Edin. London: Macmillan and Co., Ltd. 1913. (Med. 8vo, pp. 162; 64 figures. 2s. net, cloth; 1s. paper.)

THE thirty-first German Congress of Internal Medicine will be held at Wiesbaden in April, 1914 (20th to 23rd), under the presidency of Professor von Romberg, Munich. The chief subject proposed for discussion is the nature and treatment of insomnia. The reporters are Drs. Gaupp of Tübingen, Goldscheider of Berlin, and Faust of Würzburg. Professor Werner of Heidelberg will deliver an address on the *x*-ray treatment of new growths of the internal organs, and Dr. Schott Müller of Hamburg one on the treatment of sepsis. In connexion with the congress there will be an exhibition of preparations, apparatus, and instruments having relation to internal medicine. The secretary of the congress is Professor Emil Pfeiffer, Wiesbaden, Parkstrasse 13.

SANITARY AND DOMESTIC APPLIANCES.

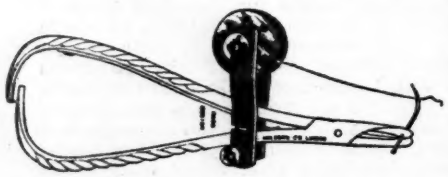
A Washable Wall-Covering.

One of the exhibits at the recent Ideal Home Exhibition was a washable wall decoration bearing the trade name of "Salubra." In reality it is a paint, the basis of which is zinc white, laid on parchment or cloth, the very great pressure to which the material is subjected rendering it solid and non-porous. We understand that although Salubra has not been "pushed" in this country until recently, it was introduced fifteen years ago, and has found much acceptance in French, German, and Swiss sanatoriums, and that in the Hôpital Lariboisière, in Paris, where one ward has been thus covered for several years, seventeen wards are now being similarly treated. We have examined this wall-covering, and have had its washable character amply demonstrated. In addition to its hygienic advantages, it has a cheerful surface and no unpleasant odour, while its strong backing enables it to seal hermetically all the small fissures and cover up irregularities in the plaster. For the operating theatre a plain, smooth tiling, readily washable with soap and water or disinfectants, is offered. The address of the Salubra Company is 18, Old Cavendish Street, London, W.

MEDICAL AND SURGICAL APPLIANCES.

A Suture and Ligature Spool-Attachment.

Mr. B. Richardson Billings, M.R.C.S.Eng. (Folkestone), writes: As the result of some years of experimenting, I have devised a suture and ligature spool whereby rapid and easy suturing and ligaturing can be accomplished. The apparatus is a substitute for the more expensive "sewing machines" which have been devised from time to time, and consists of a light metal reel on a framework, which can be attached to most of the needle-holders in common use, or even to a pair of Spencer Wells artery forceps.



The reel has deep flanges which are perforated, allowing for thorough sterilization of its contents. Its axle is instantly unmountable from the frame, by the turn of a milled nut on either side. The needle is half-curved, with the eye at the point, and, unlike the ordinary variety, once it is in the holder it need not be released. This alone saves some seconds per stitch. The needle is threaded and passed through the tissues in the ordinary way; the free end is then gripped with forceps, and the needle brought back again through the hole made, along the thread, which is then cut between tissues and needle. This is one suture made, and the needle is ready for the next. The *modus operandi* reads longer and more complicated on paper than it actually is, but the process, once seen, is easily understood and acquired. A continuous suture can be adopted with slight modification, while for rapid ligaturing the advantages are obvious. The attachment is cheap, adaptable, simple, efficient, clean, instantly changeable (allowing different materials or sizes to be used), time-saving and practical. It and its contents need not be touched at all by hand after sterilizing. A good all-round material to use on the spool is linen thread. The Holborn Surgical Instrument Company, Ltd., have carried out the idea from my models and sketches.

MEDICINAL AND DIETETIC ARTICLES.

Liquid Paraffin.

Purified liquid paraffin is at present finding much favour as a laxative, its action in this capacity being chiefly mechanical, while it is also administered internally in certain other cases besides those of constipation and intestinal disorders. We have recently examined a sample of the liquid paraffin which is supplied for internal use by Messrs. Oppenheimer, Sons, and Co., Limited (179, Queen Victoria Street, E.C.), under the name "Petremol." It has a specific gravity of 0.882, is free from taste and odour, is neutral in reaction, free from sulphur compounds, and leaves no ash on ignition. It is coloured red, with a view to making it more attractive to the patient.

CYCLECARS AT OLYMPIA.

THE EXHIBITS ANALYSED.

By H. Massac Buist.

Including the models staged with different classes of bodywork there are quite half a hundred different patterns of cyclecars from which to choose at the current exhibition at Olympia. The simplest way to arrive at a clear notion of the material available is to analyse the display according to price. It must be kept in mind that the definition of a cyclecar for competition purposes is a three or four-wheeled machine, the engine volume of which does not exceed 1,100 c.cm., and the chassis of which does not weigh more than 6 cwt. The total weight of models wherein chassis and body are built as one must not exceed 7 cwt. Practically all the vehicles staged have engines coming within the limitation as to volume, but it will be seen from the weights given in the accompanying table, in respect of all machines wherein such data is available, that they scale from 2¾ cwt. in the case of four-wheeled monocars to 10 cwt. for some two-seaters, which is the weight of a car proper. This therefore illustrates the lack of practical value in the present definition for cyclecars for competition purposes, since certain machines coming within the engine volume, using the body as part of the frame of the machine, and having, nevertheless, only 1 cwt. more weight than the limit, are thereby excluded from the show; whereas if the maker chooses to build the body as a separate part of the chassis he can be 3 cwt. over the limit for the complete vehicle—otherwise approximately 40 per cent.—and still stage his exhibit at Olympia! The whole classification is so absurd that it has been found necessary for the Society of Motor Manufacturers and Traders, which promotes the Motor Car Show proper, and for the Cycle and Motor-Cycle Manufacturers' and Traders' Union, which is concerned with the current display, to form a joint committee to ensure that no vehicle shall be excluded from one or other of the 1914 shows merely on account of its falling between one set of regulations or another. The current display may be tabulated as follows (see p. 1441).

Of the four dozen odd machines specified as separate types as to chassis, no fewer than thirty-four are four-wheelers. No new three-wheeled cyclecar model is introduced at the show. It may therefore be assumed that, as far as a year's development can indicate anything, the public conception of the cyclecar is being interpreted by the majority of those engaged in the industry as a demand for a four-wheeled machine, two wheels of which are power-driven. Indeed, in certain instances manufacturers who have hitherto been identified only with the production of three-wheeled machines now come forward with four-wheeled models as alternative types.

There has been an increase in the number of four-cylinder engines employed. Eleven of these types are now exhibited; they are in all cases water-cooled. In regard to two-cylinder motors, there has also been an increase in the practice of water cooling, which is now employed in thirty-one of the forty-eight exhibits tabulated. It will be observed that in the case of some of the cheaper machines reverse speeds are not furnished. Many firms that have hitherto used either belt drive or the chain have now taken to the bevel form of power transmission; nineteen bevel-driven vehicles are shown. The worm drive is also on the increase; there were six examples of the practice, so that half the exhibits staged have either the bevel or the worm form of final power transmission. Considering its cheapness and simplicity, it is perhaps extraordinary that there are only seven examples of friction-driven cyclecars. This class is, nevertheless, more in evidence this year than last, whereas the belt-driven vehicle is proportionately less in evidence, there being only ten examples.

Points about Individual Exhibits.

So much for general tendencies. As to the machines meeting the requirements of the medical man—who necessarily demands reliability of service, and therefore hard-wearing qualities—the general conclusion one arrives at is that there are more suitable types of vehicles to be discovered outside than inside the show, and that machines now being marketed as light cars are more suitable than those styled cyclecars. Some

£	s.	Vehicle.	Cwt.	Cylinders. No.	Cylinders. Cooling	Speeds and Reverse.	Transmission.	Stand No.
		h.p.						
185	0	10 Wilton	10	4	Water	3 and R.	Bevel	103
178	10	10-12 Tweenie	11	4	Water	7 and R.	Friction and chain	21
175	0	10 Auto-carriers	9½	4	Water	3 and R.	Worm	86
175	0	10 Mackenzie	8	4	Water	3 and R.	Worm	18
165	0	10 Chater-Lea	8½	4	Water	3 and R.	Worm	54
165	0	10 Duo (underslung)	6	4	Water	2 and R.	Bevel	65
157	10	10-12 Marshall-Arter	9	4	Water	2 and R.	Bevel	141
155	8	8 Melen	—	2	Water	3 and R.	Bevel	102
152	5	10 New Imperial	—	4	Water	3 and R.	Bevel	78
150	0	10 Day-Leeds	9½	4	Water	3 and R.	Bevel	94
150	0	10 Duo (underslung)	6	2	Water	2 and R.	Bevel	65
150	0	8 G.W.K.	5¾	2	Water	4 and R.	Friction and bevel	38
150	0	10 Mead and Deakin	—	4	Water	3 and R.	Bevel	42
147	0	8 Perry	10	2	Water	3 and R.	Bevel	112
141	15	12 Buckingham	6¾	2	Water	2	Belt	35
141	15	8 Eric	6½	4	Water	3 and R.	Shaft*	30
141	15	8-10 Marshall-Arter	8	2	Water	2 and R.	Bevel	141
140	0	7 Swift	—	2	Water	3 and R.	Bevel	91
136	10	8 Chater-Lea	7¾	2	Water	3 and R.	Worm	54
135	0	8 Humberette	7	2	Water	3 and R.	Bevel	134
135	0	8 Tiny	—	2	Water	3 and R.	Bevel	142
131	5	10 Adamson (underslung)	7½	2	Water	3 and R.	Belt	133A
131	5	8-10 De P. Duo	—	2	Water or air	2 and R.	Belt	137
130	0	8-10 Alldays	9	2	Water	3 and R.	Worm	77
130	0	6-8 Duo (underslung)	6	1	Water	2	Bev	65
127	0	8 Crescent	7	2	Water	5 and R.	Friction discs to chain	138
127	0	8 Ranger	7	2	Water	2 and R.	Chain	117
126	0	8 Buckingham	6½	1	Water	2	Belt	35
125	0	8 Pyramid	6½	2	Air	4 and R.	Friction and belts	52
125	0	8 V.A.L.	6	2	Water	4 and R.	Friction and chain	109
120	0	8 Chater-Lea	7¾	2	Air	3 and R.	Worm	54
120	0	8 Humberette	7	2	Air	3 and R.	Bevel	134
120	0	8 Warne	6	2	Air	Multi and R.	Belt	106
115	10	6-8 Buckingham	6½	1	Air	2	Belt	35
115	10	8-10 Tweenie	6	2	Water	7 and R.	Friction and chain	21
115	0	8 D.E.W.	5½	2	Water	2	Chains and belts	139
115	0	8 Ranger	7	2	Air	2 and R.	Chain	117
105	0	10 Morgan	4	2	Water	2	Chain	66
103	19	10 G.N.	5	2	Air	2 or 3	Belt	35
101	17	8 Wall-Tri-carriage	5	2	Air	2 and optional R.	Bevel	143
100	0	5-6 Auto-carriers	7½	1	Air	2 and R. (epicyclic)	Roller chain	86
94	10	4½ Wall-Tri-carriage	5	1	Air	2 and optional R.	Bevel	143
89	5	8 Morgan	4	2	Air	2	Chain	66
78	15	5-6 Auto-carriers	5½	1	Air	2	Friction discs and chain	86
78	15	7 Motorette	4¾	1	Water	2 and optional R.	Chain	105
75	0	4½ D.E.W.	4¾	1	Air	2	Chain and belt	139
72	10	5 Carden monocar	2¾	2	Air	2	Chain	33
67	0	4 Carden monocar	2¾	2	Air	1	Chain	33
59	10	3½ Carden monocar	2¾	1	Air	1	Chain	33

*The Eric is a three-wheeled machine, the propeller shaft transmitting the power to the bevel pinion and crown wheel enclosed in a case fixed to the back wheel.

comparatively ambitious schemes are to be found at Olympia—as instance the Wilton light car, which has been represented in such reliability trials as have so far been promoted. Like all the four-cylinder motors at this show, the block form of casting is employed, the bore measurement being 59 mm. and the piston travel 100 mm. The natural circulation of the water through a wedge-shaped radiator is relied on for cooling purposes, but the motor is mechanically lubricated by a pump driven off the camshaft. The three forward speeds provide ratios respectively of 4 to 7 and 13¼ to 1, the control being on the gate principle. Pressed steel Sankey detachable wheels are standard equipment.

A feature of the policy of the firm producing the friction-driven 10-h.p. Tweenie car is that the machine is guaranteed for 15,000 miles, the guarantee applying equally to the smaller and cheaper 9–10-h.p. model. The 10-h.p. Auto-carrier employs the unit principle in very neat fashion in regard to the details of the power transmission. The propeller shaft casing, the three forward speed and reverse gearbox and live axle, and the differential casing, as well as foot and hand-worked brakes, are assembled as a unit. The clutch details are novel. The equipment includes a fifth spare detachable steel wheel.

In all the Chater-Lea models, which come from a firm with a long established reputation for sound workmanship and material, the three forward speed and reverse gear boxes are controlled on the gate change principle, the ratios being common to all models—namely, 4⅛, 6¾, and 12½ to 1. In the larger model the clutch is fashioned of many discs, while a lined cone type is used for the smaller one.

An interesting feature of the new Duo type of light car is the employment of an underslung frame, such as was used for the Stabilia chassis introduced many years ago at the Paris Motor Car Show, and such as is employed in the R.M.C. American car. An excellent feature of early motor car practice is to be found in quite a number of the light cars of the day, including the Marshall-Arter machines, the frames of which are fashioned of what is styled armoured wood, being suitably braced by cross members. This, like the Duo, is an example of a machine with only two forward speeds. In the case of the Marshall-Arter type the gear box is embraced in the live-axle scheme, while a neat form of spring drive is used. In quite a number of cases variations of spring-drive practice are used. The notion is a good one, as being calculated to shield the more fragile parts of the mechanism, such as gears and so forth, from the worst shocks to which clumsy or inexperienced drivers may submit them.

Friction Driver and Underslung Frame.

The New Imperial more or less follows conventional car practice. By the employment of nickel steel for the crankshaft, only two large bearings are deemed needful. The G.W.K. is perhaps the most successful example of the friction-driven cyclecar, possibly by reason of advantage being here taken of the saving of weight by friction drive to furnish proportionately a very strong frame. The distribution of weight in the chassis is cleverly contrived, the power plant being about mid-length and in the centre of it. The four-cylinder Day-Leeds is practically a little motor car, save, perhaps, as to such minor details as the front axle; while the two-cylinder Swift appears in a new guise with the last vestiges of cycle constructional practice eliminated by the employment of a pressed steel in place of a tubular frame, and of an "I" section instead of a tubular front axle. There has likewise been a slight remodelling of the Perry cyclecar, which has now worm and segment steering, pressure-fed petrol, and an engine improved alike as to cooling qualities by the provision of larger water-jackets and in regard to balance. The water-cooled Humberette, with tie-rods to the back axle and radius rods to the front one, larger clutch, and improved gear control details, looks considerably more substantial than last year's vehicle, though it is still kept to the weight limit.

The Adamson is yet another example in the Show of a car with underslung frame; the motor is started after certain motor-cycle practice by pulling a long wire cable. The principle of the Lanchester suspension is used in the Alldays Midget car, for not only are cantilever leaf springs

used, but it also has radius rods, and the axle is allowed the particular form of play necessary to achieve the benefits of the Lanchester system of construction.

Altogether the exhibition reveals that a very appreciable degree of progress has been achieved as the result of a year's development. Handled by the medical man who has not too heavy country to negotiate, where road surfaces are reasonably good, where loads are not too heavy and speeds are strictly moderate—say not more than 25 to 27 miles an hour on the flat—the new style four-wheeled vehicle that is being variously termed a light car and a cyclecar may render good service for the money.

Some Motor Cycle Exhibits.

In regard to the cheaper and smaller examples, under the heading of proved durability, the motor cycle must undoubtedly be considered at the moment the better investment for the young medical man in the country. At the current show motor bicycle constructional progress is chiefly in the direction of elaboration, as instance the American-built Indian machine supplied with dynamotor for starting the engine and for generating the electric current for supplying the illumination. A healthy reaction from the general tendency towards complication, increased weight and power, is provided by a leading firm in the British industry, the Triumph Company, which introduces a two-stroke, air-cooled, lightweight model scaling only 125 lb. One of the pioneer firms in the motor-cycle industry in this country, the Motosacoche concern of Willesden, introduces some novelties in connexion with air-cooling details. Thus the 2½-h.p. single-cylinder air-cooled model and the 3½-h.p. twin-cylinder one are fitted with the new De Lissa air-cooled valve as the result of two years' testing before making the change. By this system, wherein the spring is above in place of below the valve, the mushroom head is pressed down on its seating in place of being pulled down on to it—a method of operation that solves the problem of the stem tending to pull away from the head. Further, the whole valve mechanism being exposed to the air, it tends to keep cooler than in the more ordinary practice, while the details are, of course, particularly accessible. A new 6-h.p. twin-cylinder side-car Motosacoche model is also introduced this year. It is of 496 cubic centimetres engine volume, and is fitted with complete electric lighting system, the accumulators for which are carried on a neat box on the footboard, while a miniature dynamotor charging them is attached to the back stays, being friction driven from the tyre. Another feature is the employment of a kick starter.

MOTOR CARS FOR MEDICAL MEN.

Light Cars.

Friction Cars, Ltd., inform us that they acquired some time ago all rights in the small "Pilot" car, to which attention was drawn at p. 1101 of our issue for October 25th, and that in the model for 1914 they have introduced what they regard as further improvements. The showrooms of the firm are in Heddon Street, Regent Street, W. [A naked chassis of this new model, as also a complete car, was on view at Olympia.]

Small Cars.

Dr. T. Gordon Kelly (Desford Grange, Leicester) writes: With reference to Dr. Willett's letter in the Journal of September 27th on the 10-h.p. Singer light cars, I note that he says, "It has a four-cylinder engine, the induction pipe being warmed, and thus giving an easy start up in the morning." It would be interesting to learn how Dr. Willett deduces the latter statement. Surely it is obvious that the engine must be started and running for a little time before the induction pipe becomes warm. Further, if he thinks the facts that this car only requires a pint of water in the radiator a week and can do forty-four and a half miles to the gallon of petrol, are startling, what would he think of my 12-h.p. four-cylinder De Dion that will run practically all the summer months without the addition of any water to the radiator, and do (although twice as heavy as the Singer) thirty-five miles to the gallon of petrol when driven at an average speed of twenty-five miles an hour?

The next meeting of the French Congress of Surgery will be held in Paris on October 5th, 1914, and following days, under the presidency of Dr. Maunoury of Chartres. The following questions are proposed for discussion: Traumatic lesions (closed) of the wrist; treatment of cancer of the tongue by cutting operation; pararenal tumours.

ROYAL COMMISSION ON VENEREAL DISEASES.

The following is the official report issued to the press by the Secretary of the Royal Commission on Venereal Diseases:

At the third meeting of the Royal Commission on Venereal Diseases, held on November 13th, Dr. R. W. Johnstone, Medical Inspector of the Local Government Board, gave evidence which followed generally the lines of the Report on Venereal Diseases written by him, and issued by the Local Government Board in August last.

He found much difficulty in arriving at a conclusion on the question of the prevalence of the diseases in the population. The figures given by the Registrar-General could not be relied upon for information of the number of deaths from venereal diseases, and this was inevitable owing to the reluctance of medical practitioners to certify deaths as due to this cause. Dr. Johnstone was impressed by the fact that the death-rates from a number of diseases known to be caused in many instances by syphilis, instead of showing a decrease, as would be expected if syphilis were diminishing, were stationary or tended to increase. Turning to the figures relating to venereal diseases in the army, he agreed that they showed remarkable decreases, but he considered that they were subject to some qualifications, and in any case he was not satisfied that they could be taken as an exact reflection of the state of the civil population. He laid stress on the fact that the men in the army, through the instruction given by their officers, were much better educated with regard to these diseases than was the ordinary civilian. For the purpose of obtaining trustworthy statistics of the prevalence of these diseases, he thought that certification of deaths should be confidential, but that this change should be made with regard to all diseases and not only venereal diseases. He was of opinion that information of value might be gained if a special return were obtained from general hospitals. On the question of notification of the diseases he was opposed to the introduction of any compulsory system at the present time. He understood that there was a possibility of a system accompanied by the names of patients being put in force in one of the Scandinavian countries, but in those countries treatment by quacks did not flourish to the same extent as in England, and he thought that there was not the same danger of notification leading to the concealment of the disease. From the point of view of the public health of the country in relation to venereal diseases, the objects of primary importance to be secured were the prompt recognition of the diseases and their early treatment. To this end he advocated that facilities for laboratory diagnosis should be provided, and that the available hospital accommodation, which at the present time was entirely inadequate, should be supplemented. He was not in favour of the erection of additional special hospitals to deal with these diseases, as he was anxious to avoid anything which would tend to have a deterrent effect; he was of opinion that the more the general hospitals could be used the more freely patients would present themselves for treatment. Dr. Johnstone pleaded for an attitude of greater frankness on the part of the public with regard to these diseases. If the public were properly educated in the matter, and the necessary facilities for treatment were provided, there was now an opportunity of reducing the diseases to very small dimensions.

On November 17th, statistical evidence as to the prevalence of venereal diseases in the army was given by Lieutenant-Colonel Scott, Deputy Assistant Director-General of the Army Medical Department. The figures furnished by Colonel Scott were for the period from 1888 to 1912, and related to the rejections of recruits on account of venereal disease, the admissions to hospital, the numbers constantly sick, and the numbers invalided from the service from this cause. Under all those heads remarkable reductions were shown. The rejections on recruiting had fallen from 0.63 per cent. of the candidates in 1890 to 0.14 per cent. of those presenting themselves in 1912. The admissions to hospital in the United Kingdom, which stood at 224.5 per 1,000 of the forces in 1888, had dropped to 56.5 in 1912. There were corresponding falls in the figures of constantly sick and invalids. In the case of

India the reductions had been still more marked. Colonel Scott showed that certain qualifications have to be borne in mind in comparing the earlier with the later years, but he was satisfied that real progress had been made and that the figures did indicate a large measure of success in dealing with the diseases in the army. He was not prepared to say whether the figures indicated a corresponding improvement in the civil population. Colonel Scott attributed the diminutions in the army figures to the greater abstemiousness and temperance now existing, to the fact that the soldier is nowadays better looked after and under better influence in the regiments; barrack conditions also are now more healthy and comfortable, and the soldiers' institutes provide greater amusements and healthy recreation. In addition there has, of course, been considerable improvement in the methods of treating the diseases. Colonel Scott remarked on the excellent work of the Royal Army Medical Corps and on the probable absence of concealment of disease from the medical officers. He laid stress also on the great importance of the personal influence of the regimental officers.

SCIENCE NOTES.

The application of Abderhalden's work on "protective ferments" to the serum diagnosis of pregnancy having given very promising results, it would seem feasible to extend the investigations to cancer serum. One or two observers have mentioned a few cases in which this has been tried, and during some recent discussions in this country on the pregnancy reaction it was evident that the method is being tried, though none of the speakers has yet recorded his results. Frank and Heimann (*Berl. klin. Woch.*, 1913) examined 46 cases of cancer, of which 30 were cancers of the uterus. Of these, 45 gave a positive result. Of 20 non-cancerous cases 19 were negative. Contrary to the teaching of Abderhalden and to the more limited experience of others, the authors found that the serums reacted not only with cancer substrate but also with placenta, and that pregnant serum acted to a lesser degree with cancer. That the protective ferment is not absolutely specific was a point insisted on by Leitch in the discussion on the Abderhalden reaction at the Brighton Meeting of the Association, and also at the Royal Society of Medicine recently, though Schlimpert at the former meeting maintained the rigid specificity of the reaction. Brockman has recently examined 25 cases of cancer by the method, and claims to have had perfect results.

Sir William Crookes, who has been engaged since March, 1909, in experimenting for the Glass-workers' Cataract Committee of the Royal Society on the preparation of eye preserving glass for spectacles, reported some of his results to the meeting of the Royal Society on November 13th. His experiments, he said, had been directed to ascertaining the effect of adding various metallic oxides to the constituents of glass in order to cut off the invisible rays at the infra-red end of the spectrum, and thus to prepare a glass which would cut off those rays from highly heated molten glass which damaged the eyes of workmen, without obscuring too much light or materially affecting the colours of objects seen through the glass when fashioned into spectacles. The elements selected as likely to be worthy of further experimentation by combining the metals, two, three, or four at a time, in one glass so as to enable the advantages of one to make up for the shortcomings of another, were cerium, chromium, cobalt, copper, iron, lead, manganese, neodymium, nickel, praseodymium, and uranium. Whilst the chief object of the research was to find a glass that would cut off as much as possible of the heat radiation, the problem was also attacked from the ultra-violet and the trasparency points of view. Glasses which cut off over 90 per cent. of heat radiation, which were opaque to the invisible ultra-violet rays, and were sufficiently free from colour to be capable of use as spectacles, were prepared, but it was not found possible to combine in one specimen of glass these three desiderata in the highest degree. The ideal glass which would transmit all the colours of the spectrum, cutting off the invisible rays at each end, is still to be discovered. As far as transparency, however, was concerned, it would not, he considered, be an unmixed advantage for the sought-for glass to be quite clear and colourless. The glare of a strong light on white cliffs, expanses of snow, electric light, or the sea, was injurious to the eye, and therefore a tinted glass combining good obstruction to the heat radiation and ultra-violet rays was the best to aim for. For ordinary use, when no special protection against heat radiation was needed, the choice would depend on whether the ultra-violet or the luminous rays were most to be suppressed, or whether the two together were to be toned down. Ordinarily the visible spectrum was assumed to end at the Frauenhofer line K, λ 3933, but light could easily be distinguished some distance beyond by the naked eye. It might therefore be considered that the ultra-violet rays to be cut off on account of their possible injurious action were those of shorter wave-lengths than, say, λ 3700. Many glasses, all opaque to rays shorter than λ 3700, had been prepared for this purpose. The colours were pale green, yellow, and neutral; they transmitted ample light, so that a choice of tints was available to suit individual taste. Glasses restful to the eyes in the glare of the sun on chalk cliffs, expanses of snow, or reflected from the sea, of yellow, green, and neutral tints, had also been prepared. They had the advantage of cutting off practically all the ultra-violet rays and also a considerable amount of the heat radiation.

In the *Archives of the Röntgen Ray* (September, 1913) there is a very interesting plate by Dr. E. R. Morton illustrating the *x*-ray photography of flowers. The three flowers photographed together are narcissus, cowslip, and lily of the valley, and the details of the technique employed are given in a short note. Owing to their varying densities the internal structures of these flowers stand out very clearly, even in the positive impression. The young seeds lying in the ovary of the narcissus, and the fine structures of the other two flowers are brought out very plainly. The effect could be enhanced by making stereoscopic pictures and viewing them in the Wheatstone stereoscope. Dr. Morton says that by careful attention to technique it is possible to get radiographs showing the external form and surface markings, as well as the internal structure. The pictures are so beautiful in themselves that one may expect an extended use of the method in botany.

A very important communication by Dr. Mackenzie Wallis on sulphaemoglobinaemia appears in the current number of the *Quarterly Journal of Medicine*. This disease is characterized by marked cyanosis, absence of physical signs in the chest to account for it, with weakness, headache, and constipation as constant accompaniments. The condition can only be diganosed by a spectroscopic examination of the blood. The oxyhaemoglobin is replaced by sulphaemoglobin, and the blood assumes a chocolate-brown colour in consequence. The change in the blood may often be recognized by simple transillumination of the ear, but the spectroscope will reveal a characteristic band in the orange-red part of the spectrum between the Frauenhofer lines C and D, extending from λ 610 to λ 625. This band is also characteristic of methaemoglobin, but on the addition of ammonia to the blood the band disappears in the latter case, whereas it remains unchanged in the former. Another point of difference is that if carbon monoxide be passed through the solution of sulphaemoglobin all the bands are shifted towards the blue end of the spectrum, whereas in the case of methaemoglobin solutions no change is produced. These two points serve to differentiate methaemoglobinaemia from sulphaemoglobinaemia. Both diseases are characterized by cyanosis. In methaemoglobinaemia the most marked symptom is the constant occurrence of diarrhoea, as contrasted with the constipation of sulphaemoglobinaemia; in the former, three out of four of the cases recorded have been adult males; whilst in the latter, eight of the nine authentic cases have been females. In sulphaemoglobinaemia the blood counts are practically normal, and there is no evidence of any definite pathological lesion to account for the condition. Dr. Mackenzie Wallis has had the opportunity of investigating four cases of the disease, and he regards it as being of more common occurrence than is generally suspected. On adding a few drops of the sulphaemoglobin blood in one of the cases to normal blood he found that the characteristic change was

produced in the latter, clearly demonstrating the presence of a powerful reducing agent. Cultures from the blood proved negative in all cases, and then attention was directed to the various body secretions and excretions in the hope of obtaining light on the reducing substance. Large quantities of nitrites were found in the saliva, and also in the freshly passed urine. With the help of Dr. Gordon, bacteriological examinations of the patients' saliva were made, and there was isolated a short, oval bacillus, non-motile, and negative to Gram's stain, growing best at 25° C., and inhibited at 37° C. This nitrite-forming bacillus has been isolated from the saliva of all the cases, and has never been found in normal individuals or those suffering from other diseases, and its characters are different from the other nitrosobacilli known. On injection of cultures into the ear vein of rabbits sulphaemoglobinaemia was not produced; probably the organism cannot flourish in the blood stream and produce its effects directly. The author, on theoretical grounds, considers that the bacillus in the buccal cavity produces a reducing substance which, on absorption into the blood stream, brings about a reduction of part of the oxyhaemoglobin, and suggests that the small trace of sulphuretted hydrogen necessary then to produce sulphaemoglobinaemia might be derived from the intestinal tract. The reducing substance in the blood of these cases is possibly of the nature of a hydroxylamine derivative. One of the cases was treated by means of a vaccine prepared from the nitrosobacillus found in the saliva and became perfectly well.

LITERARY NOTES.

IN the JOURNAL of November 22nd, under the head of Literary Notes (p. 1394) mention was made of the jubilee number of the *British Journal of Dermatology* which has just appeared. It was there stated that Dr. J. M. H. MacLeod had been editor since 1904. We are informed that Dr. MacLeod resigned the editorship in 1910. Since then the post has been held by Dr. J. H. Sequeira.

The November issue of the *Prescriber* is a special number dealing exclusively with tuberculin therapy. In addition to original articles by competent writers there is a review of the subject in which the latest references are included and a list of recent books is given. The number presents in a brief compass a vast amount of carefully sifted information of the greatest value to the practitioner. It may be mentioned that the *Prescriber*, though published in Edinburgh, can be obtained from H. K. Lewis, 136, Gower Street, W.C.

The Christmas Number of *Hearth and Home* is beautifully illustrated, and the literary matter excellent and sufficiently varied to suit all tastes. Mr. F. Frankfort Moore contributes a story entitled "The Treasure House"; and Miss May Wynne one called "A King's Secret." Mr. Philip Gibbs writes amusingly on the trials of a novelist; among these is trying to find a plot which has not been utilized a thousand times before, and trying to live outside a debtor's prison while he is striving to write a story on that plot. But his greatest trial is the fear of unwitting libel by drawing characters that are supposed to be "from life." Francis A. Taylor's story "A Grey Dawn," M. C. Ramsay's "The Pley," and Miss Hilda Cowham's "When the Thaw Came," and the little story "The Postscript," by M. M. Oyler, are, each in its way, readable. Interspersed with the fiction are articles on Winter Holidays in Switzerland, on Christmas and Fancy Dress, with suggestions for the costume ball, Gowns and Gossip (by Mrs. Eric de Ridder), on the influence of colour (by Mrs. Talbot Coke), sports for women (by Miss Mabel E. Stringer), Royal Christmas cards, cookery and household management, and motoring and its charms. There is a photogravure supplement, Innocence, exquisitely reproduced from the picture in the Wallace Collection. We congratulate the editor of *Hearth and Home* and all concerned on the result of their labours.

We learn that Mr. Reginald Cory has received the gracious permission of the King to dedicate to His Majesty the work entitled, *The Horticultural Record*, which is to be published next month by Messrs. J. and A. Churchill. It contains 117 coloured plates, reproduced from photographs taken at the Royal International Horticultural Exhibition, 1912, and 67 half-tone plates. Several well-known writers contribute articles on the progress of horticulture since the first International Exhibition in 1866. Mr. Darlington discusses roses, Mr. Farrer writes of Alpine gardens, Mr. Watson of stove plants, Mr. Bean of trees and shrubs, other contributors dealing with separate sections. The book contains the official report of the 1912 exhibition, including the papers contributed to the Science and Education Conference.

Colonel Kenneth Macleod, I.M.S. (ret.) has sent us a reprint of the interesting articles on Sir Walter Scott's Doctors and Quacks, contributed by him to the *Caledonian Medical Journal* in July and October, 1913. Scott's maternal uncle was Professor John Rutherford, a leading member of the medical faculty of the University of Edinburgh in the eighteenth century and a pioneer in clinical instruction. Scott lived largely in a medical atmosphere, for Edinburgh was then the Mecca to which scientific pilgrims and sufferers from obscure diseases came from the ends of the earth. He writes of medical men, as a rule, with respect, and in *The Surgeon's Daughter* he has given in Gideon Gray a very sympathetic picture of the country doctor. Mention is made in the same novel of Scott's friend, Mungo Park, the famous explorer who had been a general practitioner, and who said that having had experience of both ways of life, he "gave the preference to travelling as a discoverer in Africa than wandering by night and day in the wilds of his native land in the capacity of a country medical practitioner." Colonel Macleod gives an account of all the doctors mentioned in Scott's novels. He also refers to the fact that during infancy and often in after-life Scott had need of the ministrations of medical men. *The Bride of Lammermoor* was dictated during the intervals of intellectual lucidity left to him when taking large doses of opium to relieve the agony of gall stone. The nurses introduced in the stories are mostly hags of the Sairey Gamp type. Tender and intelligent nursing by ladies is mentioned in several of the novels, but of course systematic training of nurses did not exist in Scott's day. Colonel Macleod's interesting little pamphlet may be commended to all lovers of the "Wizard of the North."

Dr. Felix Brémond (quoted in the *Journal de Médecine et de Chirurgie Pratique*) refers to the therapeutic use of human saliva at different times. Its applications to the art of healing were never very numerous. It was used externally especially as a remedy for skin diseases, notably eczema, impetigo, and herpes, for simple wounds and superficial ulcers, for small-pox pustules, and even some mild manifestations of leprosy. But it is chiefly as a remedy for the bites of venomous reptiles that human spittle was thought to be valuable. Oribasius, Pliny, Varro, Nicander, Galen, Dioscorides, and many others among the ancients believed that saliva, especially that taken from a fasting man, was a specific against such poisons. Rabelais refers to the subject in the fourth book of Pantagruel. The celebrated natural philosopher, Francesco Redi, made experiments to test the general belief that the mere contact of the saliva killed reptiles, a belief expressed by Lucretius when he said that if one spat on a serpent it became weak, devoured itself, and died. Redi placed six vipers in a basket and during a fortnight poured into their throats the saliva of several men. The animals were none the worse; indeed, it seemed that this new food gave them greater strength and liveliness. The saliva was also believed to be fatal to scorpions. Avicenna taught that the saliva of a fasting man made worms come out of the ears. Pliny states that inflammation of the eyelids was cured by the application of saliva. Tacitus affirms that blindness can be cured by wetting the eyes and cheeks of the blind man with saliva. It is somewhat strange that Dr. Brémond makes no reference to the use made of spittle in the cure of the blind man in the Gospel (St. Mark viii, 22–25):

> And He cometh to Bethsaida; and they bring a blind man unto Him, and besought Him to touch him.
>
> And He took the blind man by the hand, and led him out of the town: and when He had spat on his eyes, and put His hands upon him, He asked him if he saw ought.
>
> And he looked up, and said, I see men as trees, walking.
>
> After that He put *his* hands again upon his eyes, and made him look up: and he was restored, and saw every man clearly.

British Medical Journal.

SATURDAY, NOVEMBER 29TH, 1913.

THE REFORM MOVEMENT AT OXFORD AND CAMBRIDGE.

AT one period—not long past—in the history of the Universities of Oxford and Cambridge, a discussion of any question of reform would have left those concerned with the study of natural science and medicine, as such, cold and unresponsive, for they would have held that the questions involved affected mathematics, philosophy, theology, or classics mainly, though they might have entered with enthusiasm into a discussion as to the place and value of these subjects in a university curriculum. Medicine and natural science then played so small a part in the work of the universities that any question of university reform could have had little interest for medical men. This attitude is no longer tenable, and is not maintained by those interested in medical education, for both Oxford and Cambridge are now the seats of medical schools possessing an importance not to be measured adequately merely by the number of students attending them. At neither school has the clinical portion of the curriculum been greatly developed, though facilities for a more or less complete medical curriculum have for some time past been in existence at both. With the development of the study of the natural and physical sciences, and in proportion to the number of men studying at each university, the application of these sciences to medicine has come to be a very important factor in the work of its students, and it is now recognized that both at Oxford and Cambridge the schools have assumed the function of providing a thoroughly scientific foundation for those students who intend to study and to practise medicine.

"At a university," said Von Humboldt, "knowledge is fermenting in a large number of powerful, active, youthful heads. Its progress is quicker and more lively" (than in an academy of science or art). "In fact, knowledge cannot be communicated as knowledge without being on each occasion actually conceived anew, and it would be incomprehensible if one did not here and there—indeed, often—stumble on discoveries. University teaching, moreover, is not so burdensome as to be an encroachment on the leisure for research; rather does it serve as an aid to it. Moreover, at any great university there are always men who lecture little or not at all, but who study and research in solitude."

In an essay, well conceived and clearly written, which Mr. Tillyard, of St. John's College, Cambridge, published recently,[1] special stress is laid on the teaching functions of the university, and it is with this aspect of the question that the reforms he suggests would deal. He has traced the history of the two universities, showing the method of their development and of the forces that have played a part in moulding the studies in each. He believes thoroughly in the value of the collegiate system, if properly controlled and organized, but he is evidently of opinion that the distinctive features of the university in its professorial and collective work have unfortunately been overshadowed by the colleges; they have, he holds, gradually arrogated to themselves powers and functions which at their foundation were never contemplated by their founders or by the university. He maintains that much of the collegiate work would be better done in larger classes, where there is more spirited competition; he thinks that collegiate work has a great tendency to become repetition and coaching work, and that the larger outlook is lost. It is acknowledged that men in college help to educate one another and to form character, that the personal tutorial influence may be very great, that the tutor may give explanations and help men over difficulties, and generally simplify their studies by personal contact in a way that cannot be done in larger classes. On the other hand, it is maintained that the duplication of prelections on the same subject in different colleges leads to a waste of energy and of influence, and to financial extravagance that keeps the university exceedingly poor. This, of course, is merely a general statement of the views of the author, but those who apply themselves carefully to a perusal of the facts and arguments he has marshalled will rise from their study with a conviction that records and facts justify the author in his conclusion that the whole question of the relations of the colleges to the university and of tutorial instruction to professorial teaching calls for very careful and extended consideration.

It will, we think, be admitted that Mr. Tillyard has made out a case for inquiry, either internal or external. It does not come within his scope to suggest how far the preliminary scientific medical training can be brought into line with the training given in other fields of knowledge; but it is exceedingly interesting to note that at Cambridge there is a gradual removal of the scientific laboratories from the colleges and a concentration of the work in the university schools and laboratories; whilst in Oxford, where the medical and science schools are younger and as yet not so fully developed, some colleges have founded laboratories of their own instead of concentrating their energies and finances on those of the university. Mr. Tillyard evidently believes in the Cambridge plan, and his essay may be heartily recommended to the careful study of old Oxford and Cambridge men; in fact to all who are interested in university education. The author is no laudator of the old at the expense of the new, but he expresses the conviction that the ancient universities have high functions of their own, which can be developed only as time goes on, and then in all probability but partially by most of the newer universities; each of these has come into existence to meet the requirements of a locality rather than the needs of a nation.

[1] *A History of University Reform from 1800 to the Present Time, with suggestions towards a complete scheme for the University of Cambridge.* By A. I. Tillyard, M.A., St. John's College, Cambridge. Cambridge: W. Heffer and Sons, Ltd. 1913. (Demy 8vo, pp. 408. 10s. net.)

THE ETIOLOGY OF PELLAGRA.

AT the eighth meeting of the Italian Pathological Society, held in Pisa last spring, Professor A. Perroncito of Pavia presented an excellent summary[1] of the views at present held as to the etiology of pellagra, dividing them into three main classes—the zeistic, the toxic-zeistic, and the parasitic.

The zeistic theories suppose that pellagra is due to poisoning by maize (*Zea mais*). Lussana, Strambio,

[1] *Lo Sperimentale*, Florence, 1913, lxvii, suppl. al Fasc. iv, 94-142.

and Albertoni held that the patients were underfed, and hence developed pellagra. This view, however, does not explain cases of pellagra appearing in persons with a demonstrably adequate diet, nor the absence of pellagra in underfed communities that do not consume maize, nor the periodicity of pellagra; though it must be admitted that an exclusive or semi-exclusive diet of maize is inadequate (Tullio), and that pellagra increases or diminishes in proportion as the economic condition of a district gets worse or better. The argument that pellagra is absent from many of the poorest districts of Italy seems unanswerable. It was suggested by Zuntz that sound maize contained toxic substances, and so might give rise to pellagra. Experiments made upon animals have shown in some cases that sound maize alone cannot keep them in health; acute and chronic gastro-enteritis and loss of hair may occur in guinea-pigs, but rats did well for as long a period as a year, whether the maize they were given was sound or not. Rabbits gave results similar to those obtained with guinea-pigs. But in the case of man, several Italian workers have found that grave changes in the metabolism are not characteristic of pellagra; sound maize does contain toxic substances, but their relation to pellagra is not yet known. A toxic theory of pellagra would not explain the epidemiological facts—why pellagra is distributed irregularly about districts with a uniform consumption of maize; why pellagra is worse in spring and shows periodicity; why the patients may relapse years after giving up maize. A recent theory enunciated by Aschoff, Haussmann, Horbaczewsky, Raubitschek, and others, supposes that it is a photodynamic disease; the fatty and colouring matters of maize are believed to sensitize the tissues to the action of light, and so to give rise to the skin eruptions. This theory lacks support, and would not explain the common occurrence of new cases in February and March, when the sun's rays are weak. De Giaxa and others have found that *Bacillus coli communis* acquires particularly toxic and virulent properties in the intestines of animals fed on maize; if the animals die, death is due to the absorption of these toxins from their intestines. But these experiments do not prove that pellagra is due to *B. coli* intoxication, though, of course, it may be a factor in the disease.

According to the toxic-zeistic theory originated by Sette and Balardini, and now associated with the name of C. Lombroso, pellagra is the effect of an intoxication by poisons developed from spoilt maize by the action of bacteria that are in themselves harmless to man. The general facts in support of some such theory are as follows: Pellagra appears, not in proportion as the use of maize extends, but in proportion as the maize used is injured by damp; the similarity between pellagra and other intoxications (for example, by lead, arsenic, alcohol); the fact that a disease similar to pellagra can be produced in animals by the use of extracts of spoilt maize; the evidence pointing to an intoxication of the cerebro-spinal and sympathetic nervous systems in pellagra; the possibility of controlling pellagra by preventing the consumption of spoilt maize, and of curing it by substituting good maize for bad. Lombroso himself has seen places in which spoilt maize was consumed but no pellagra occurred, and Perroncito states that it is extremely difficult to obtain trustworthy and full statistics of the prevalence of pellagra. It appears that spoilt maize is spoiled by infection with the hyphomycete *Penicillium glaucum*. Lombroso claimed to have produced a mild pellagra in twelve persons given alcoholic extract of spoilt maize for ten to thirty days. But a scientific commission appointed to control his observations was unable to agree that his experimentally produced disease was pellagra. Lombroso then began experiments with extracts of putrefied maize, isolating a particularly active substance which he called pellagrozein, an alkaloid, which produced in animals a disease like pellagra. But no man eats putrid maize, and the toxin is so weak that not less than 90 kilograms of putrid maize, at one meal, would be required to produce toxic symptoms. Perroncito concludes that Lombroso's work has been an "admirable humanitarian apostolate," but has not proved that pellagra is due to spoilt maize. The view that spoilt maize might carry with it into the intestine microbes that would there develop toxins and so cause pellagra has been worked out by Monti, Tirelli, Pellizzi, Gosio, and others; *Penicillium glaucum* in particular has been indicated, and the toxin has been thought to be a phenol—possibly parahydrocumaric acid, $C_8H_{10}O_3$. But none of the work has proved that any connexion actually exists between pellagra and poisoning by the products of these bacteria or fungi. Antonini and Mariani have found the serum of pellagrous persons unusually toxic to animals; while the serum of a person cured of pellagra was found to contain an antibody neutralizing the toxicity of such serums. Volpino has shown that the pellagrous show a marked reaction of hypersensibility when injected with watery extract of spoilt maize, while normal persons do not; Volpino calls the active substance "pellagrogenin." At first he found that similar extracts of sound maize produced no such reaction in the pellagrous; recently, however, he has found the opposite. At the present time all efforts to find precipitin reactions or deviation of complement in pellagra have failed.

Of the parasitic theories, Perroncito considers in detail only those of Ceni, Tizzoni, Sambon, and Alessandrini. Ceni believes that pellagra is an infection with *Aspergillus fumigatus* or *A. flavescens*, or, rarely, with both; later he added *Penicillium glaucum* to the list as especially active in the chronic cases of pellagra. The fungi form spores in the intestine; these spores travel to various tissues—pleura, meninges, pericardium, lungs—and there produce toxins that cause pellagra. Maize free from these aspergilli does not produce pellagra. Ceni produces no evidence for this migration of spores about the body, and it is hard to understand how spores could produce large amounts of toxins; in his earlier work he grew the spores from the tissues of 42 out of 50 autopsied patients, but he now pays little attention to this line of research. His toxin, again, is a very feebly toxic substance.

Tizzoni attributes the disease to the pleomorphic *Streptobacillus pellagrae*, which he has described in detail; he finds it in the circulating blood (taking 10 c.cm.) of pellagrous patients, in the faeces of chronic cases, in spoilt maize, and, recently, in the milk of a pellagrous woman. It is pathogenic to various kinds of animals. It is a highly polymorphic microbe, and its unity has been denied by Bravetta. Perroncito failed to find it in the blood of 20 severe cases of pellagra, and other investigators have been equally unsuccessful. It appears to produce no immunity reactions in the pellagrous. Recently Tizzoni has come to the conclusion that his streptobacillus is a pleomorphic form of a fungus, perhaps an actinomyces. The researches of Sambon, conducted in Italy and other countries, have led him to conclude that maize has nothing to do with

pellagra; that pellagra has a definite topographical distribution; that its endemic foci may remain unaltered for at least a century, and are closely connected with running water; and that a blood-sucking insect (*Simulium*) probably conveys it. At one time he thought the parasite might be a trypanosome, later an ultramicroscopic virus. Perroncito gives the *pros* and *cons* here at some length. He estimates that from 90 to 99 per cent. of the pellagrous feed mainly on maize, and considers it impossible to exclude maize from the possible causes of pellagra: he states that pellagra undoubtedly occurs in the absence of running water and in places where *Simulium* is not to be found.

He believes that Sambon's views may be correct; but that as the parasite itself is still unknown to us, and the position of its carrier, *Simulium*, is still unproven, no more definite judgement can be passed upon them at present. The view of Alessandrini is that pellagra is due to an infecting agent in drinking water; he says that pellagra is absent where clear running water is drunk, present where standing or stagnant water is consumed, and disappears or extends in proportion to the care or want of care shown in safeguarding the water supply. He concludes that the infecting agent is neither bacterial nor protozoan, and has no intermediate host, but is a filaria; he has found larvae of the filaria in stagnant waters, and filarial ova in the skin of pellagrous patients. But Fratini and others have tried without success to trace any connexion between drinking water and pellagra in various parts of Italy. Again, the filariae are generally considered to be obligatory parasites, and to have an intermediate host; and Perroncito himself has for five years been looking for objects like their ova in the tissues of pellagrous patients, but never with success. Quite recently Long has attributed pellagra to an infection of the intestine by an amoeba.

Perroncito concludes his report by saying that destructive criticism has been his chief function in its composition. He points out that the present successful legislation against pellagra has been based on the toxic-zeistic theories, and that there can be no doubt about the toxicity of spoilt maize. A maize diet and poverty are, he considers, two of the most important factors in the etiology of pellagra; the disappearance of poverty (*miseria*) brings about the disappearance of pellagra.

THE ASYLUM SERVICE.

A MEETING of assistant medical officers of the public asylums in the Midlands of England was held in Birmingham on November 18th, when, in view of the widespread dissatisfaction owing to the disabilities under which assistant medical officers laboured, it was resolved to form an Association of Assistant Medical Officers of the Midlands of England for the protection of their interests. A provisional committee was appointed and a guarantee fund of £100 raised. Dr. F. J. Stuart, Berry Wood, Northampton, undertook to act as provisional secretary, and it was arranged to hold meetings of assistant medical officers in other parts of the country. The arrangements at present made are that a meeting of assistant medical officers in the North of England and North Wales shall be held at the Midland Hotel, Manchester, on Wednesday next, December 3rd; another for the officers of the West of England and South Wales at the Royal Hotel, Bristol, on Thursday, December 4th; and a third for London and the South-East of England at the Westminster Palace Hotel, London, on Friday, December 5th. All the meetings will begin at 3 p.m.

Two years ago the Medico-Psychological Association of Great Britain and Ireland appointed a special committee to consider the status of psychiatry as a profession in the United Kingdom and the reforms necessary in the education and conditions of service of assistant medical officers. In October last the committee of the Durham County Asylum, as was noted in our columns at the time, sent a circular letter to the county asylums authorities of England suggesting that a conference of representatives of these authorities should be held to discuss the present position of the asylum medical service and to formulate a scheme for its improvement. The circular letter made reference to the difficulty experienced in obtaining medical men to fill the junior branches of the asylum medical service, and pointed out that this difficulty might be attributed to the greater attractiveness of the public health, school, and tuberculosis medical services. In commenting on the matter at the time we observed that, if a proper class of medical men was to be obtained for the asylum service, it was necessary that the conditions should be such as to ensure to every member of it "freedom to live a normal life, with opportunities for making himself efficient in his specialty, and of advancing our knowledge of it, and with a reasonable prospect of attaining a position of greater freedom and responsibility when he has proved himself worthy of promotion." Shortly after this article was published, the interim report of the special committee of the Medico-Psychological Association was issued in the *Journal of Mental Science*. The annual meeting of the Medico-Psychological Association, after discussing the report, directed that copies should be forwarded to the Lord Chancellor, the Home Secretary, the Lord Chancellor's Visitors, the Commissioners in Lunacy, and the governing bodies of asylums, licensed houses, and registered hospitals.

The report was divided into three parts, in each of which the conditions in this country were contrasted with the methods adopted in other countries. The first part of the report dealt with the absence of proper provision for the early treatment of incipient and undeveloped cases of mental disorder; the second with the inadequacy of the facilities available in this country for the study of psychiatry and for research; and the third with the unsatisfactory position of assistant medical officers in respect to professional status, the prospects of a career, and the conditions of asylum service. In this third part of the report it is observed that the appointments in this country are made by lay committees, which, though genuinely desirous to appoint the best candidate, are in most cases without expert advice, and without adequate knowledge of the factors involved, so that their action has generally been haphazard, and often dependent upon considerations having little relation to the actual claims and qualifications of the candidate. The report stated that there was no general standard of requirements for candidates, but during the discussion it was noted as a favourable omen that candidates were now presenting themselves who had obtained the special diploma. The Committee reported that with comparatively few exceptions a junior medical officer obtained promotion only in the asylum in which he began his work, and that in many asylums promotion was altogether arrested by the failure of the seniors to get appointments elsewhere. In Germany, France, and America

State services exist, and the facilities for interchange between the various asylums is therefore considerably greater than in this country. In France appointments to the lunacy service are made after examination, and further examinations must be passed before promotion. In Germany, where a satisfactory examination in psychiatry must be passed in order to obtain a degree in medicine, appointments to the asylum service are made without further training or examination, but an assistant physician receives a higher initial salary if he has had post-graduate training in a clinic; medical officers are appointed in the first place for a probationary period of one to three years, and only become members of the regular staff if their work has been satisfactory.

In dealing with the lack of attractive posts in this country, the report stated that only a minority of those who entered the service could hope to reach the position of superintendent, and that there were very few well-paid appointments available for those specially qualified to carry on scientific investigation and research. The ratio of the salary of a senior assistant medical officer to that of the superintendent is generally low; he is frequently forbidden to marry, and has but little autonomy and independence. In many countries the senior assistant medical officer has a considerable degree of autonomy and independence, and the ratio of his salary to that of the superintendent is high—5 to 7 in some asylums in Germany. In America from one-half to one-third of all assistant medical officers are married. In Germany marriage is generally permitted after the period of probation has been passed, and if a house is not provided on the asylum estate the medical officer is allowed to live out. In 104 German asylums with a total medical staff of 636, married quarters are provided for 320 men, and 222 are actually married. Finally the report dwelt on the tendency of routine to kill enthusiasm, since the promotion or advancement of a medical officer depends very little upon his knowledge of psychiatry, and the work assigned to junior medical officers is "in the majority of cases monotonous, uninteresting, and without adequate responsibility." In Germany junior medical officers are expected to take up some particular line of study in addition to their routine work, and special study leave—often with financial assistance—is given. The prospects of promotion are influenced by their energy and success in such work.

The genesis of the report clearly shows that the medical superintendents of lunatic asylums in this country are in sympathy with the aspirations of assistant medical officers, and further evidence of this is afforded by the fact that Dr. Bedford Pierce, medical superintendent of the Retreat, York, who is chairman of the committee, has expressed his satisfaction at learning that meetings of assistant medical officers of public asylums are being held to discuss the problem.

A more severe indictment of the existing system than is contained in this report it would be difficult to frame, for its concluding words are that the existing system "leads to the stunting of ambition and a gradual loss of interest in scientific medicine, and it tends to produce a deteriorating effect upon those who remain long in the service." We can add nothing to this strongly worded condemnation except an expression of agreement with the opinion that the statement of facts submitted demands the earnest attention of public authorities and all interested in the welfare of the insane.

THE SPECIAL REPRESENTATIVE MEETING.

The business of the Special Representative Meeting which is to meet in London on Thursday next, December 4th, is mainly financial. Before the last reorganization the annual receipts of the British Medical Association showed a very substantial balance over expenditure. The savings accumulated year by year amounted in 1902 to the substantial reserve of £92,000, practically all invested in the valuable freehold site at the corner of Agar Street, in the Strand. In that year the members of the Association decided greatly to increase their political activities. A number of standing committees were called into existence, and a Medical Secretary with a clerical staff appointed. This had a two-fold effect on the financial position of the Association: it added materially to its annual expenditure, and it was found necessary to provide larger office accommodation for the committees and the staff of the new department. This was done at a cost of about £45,000 by pulling down the old premises, which consisted of one large house in the Strand and four small houses adjoining in the side street, and erecting on the site thus cleared an entirely new building, part of which has been let off. It was expected that these increased activities would bring a large accession of members, and this expectation was to a considerable extent fulfilled; but experience proved that expenditure increased still more rapidly. The receipts in 1902 amounted to £45,000, and the expenditure to £40,500, affording a surplus of £4,500. Had a surplus of about this amount been obtained in subsequent years the Association would have been in a position to pay off the whole debt on the new buildings within the next five years or so. But in 1910—that is to say, before the Insurance Bill was introduced—the annual surplus was only £2,000, and, having regard to the debt of £45,000 to the bank, the position even at that time caused anxiety to the Treasurer and to the Council. With the introduction of the Insurance Bill and all that it entailed expenditure went up by leaps and bounds, so that the expenditure of the Association in 1912 was £81,800—more than double what it was in 1902—while the actual income was only £66,000. This deficit of nearly £16,000 was met as to £7,000 by a vote from the Insurance Defence Fund, and as to the remaining £9,000 by trenching on the reserve. It is quite clear that this cannot go on. Something must be done, and the alternatives are a diminution of activities or an increase of income. It had been hoped that the balance might be adjusted by the practice of rigid economies without any diminution of activities. The enthusiastic labour of two industrious special committees appointed for this purpose and the solicitous care of the Treasurer have not been without fruit, but their efforts to attain a satisfactory equipoise in this way have been frustrated by political events and by the demands of members expressed in the Divisions and through the Representative Body for yet greater efforts, and more efficient and extensive organization, demands which all necessarily imply expenditure. The Annual Representative Meeting decided by the requisite two-thirds majority that the time had arrived when the annual subscription should be raised, and after some alternative sums had been mentioned, it decided that the annual subscription should be raised to 2 guineas, but that the change should apply only to members resident in the British Isles. In some of the Dominions members already pay a higher subscription than home members. The decision of the Annual Representative Meeting involves an alteration in the by-laws, and the primary reason for calling the Special Representative Meeting next week is to discuss and, if approved, to adopt a new by-law fixing the annual subscription for members residing in the British Islands at two guineas. At the Annual Representative Meeting a report of the State Sickness Insurance

Committee was presented by the Council recommending the establishment of a fund for the better organization of the medical profession, and for the provision to members of that fund of certain insurance advantages. The meeting decided not to take any decisive action until the scheme had again been submitted to the Divisions; the proposal, and an alternative scheme, were published in the Supplement for November 1st, and will also be submitted to the Special Representative Meeting. The third topic for its consideration is a report by the Council on various matters relating to the Insurance Act (Supplement, November 1st, p. 367). The main recommendations have reference to medical referees, the unallocated funds, the means to be taken to check the extension of medical aid institutions, and the promotion of the interests of members who have not entered into agreements with Insurance Committees. The Annual Representative Meeting at Brighton instructed the Council to take the steps necessary to obtain an extension of the Memorandum of the present company to include the power of borrowing money on mortgage or otherwise. This is desired because such power would give the Association the means of obtaining money—for instance, by debentures—at a rate of interest much more favourable than through a loan from the bank. The Council has accordingly taken the opportunity of the Special Representative Meeting to hold the first of the two statutory general meetings required to approve the necessary alteration of the Memorandum. The notice convening this meeting was published in the Supplement of November 22nd.

LEPROSY IN LONDON.

Every now and again there appears in the newspaper the alarming headline "Leprosy in London." Some years ago there was a great scare, and meetings were held and funds collected, all because one leper had been discovered by some enterprising reporter. An article appeared in one of the leading monthly magazines with the blood-curdling title—insisted upon by the editor in spite of the strong remonstrances of the author—"The Dreadful Revival of Leprosy." People know better now, and they bear with equanimity the announcement that there are at the present moment some fifty lepers in England, and that there are generally one or two among the out-patients attending the dermatological departments of the various London hospitals. Dr. Bayon, in the interesting address delivered before the Royal Society of Medicine on November 20th, which is published at page 1420, states that of all these patients only one has contracted the disease in the United Kingdom. But if lepers in this country are a practically negligible quantity, there is a very large number in different parts of the British Empire. In India the last census showed that there had been an increase from 100,000 to 110,000 in ten years. Things are still more serious in Africa. According to Dr. Bayon, twenty-five years ago the principal medical officer counted 300 in Basutoland alone. He foretold that unless segregation was enforced the number would be doubled within twenty years. It may be remembered that some years ago a strong protest against segregation, with special reference to South Africa, was made by a man of deserved eminence, whose mind was in the thrall of a theory as to the origin of leprosy, in which contagion was practically excluded as a factor in its production. His teaching on the subject, which was not accepted by the members of the profession who had the largest opportunities of knowing how the disease spread, naturally commended itself to the official mind, which tends to place considerations of finance before all others. At any rate, the advice of the principal medical officer of Basutoland was not acted upon, and his prophecy was more than fulfilled, the census of last year showing that there were 800 to 900 lepers in that district. This might have been foreseen, for it is a matter of history that the abandonment of segregation which followed the report of the London College of Physicians in 1867, in which the theory of contagion was rejected, was followed by a great increase in the number of lepers in our tropical and subtropical colonies. Although the disease is contagious, however, it does not follow that the existence of a few lepers in a country, or even in a town, is likely to spread the taint through the community. As Dr. Bayon puts it, "The modern medical eye looks upon leprosy as a disease which is definitely contagious, though under proper sanitary conditions to a very slight degree." As such conditions often cannot be enforced, the safety of the people demands segregation of lepers. This is necessary in the interest of the sufferers themselves, for, as Dr. Bayon points out, it is only in properly constructed and conducted asylums that lepers can be cared for in a satisfactory way. When large numbers have to be dealt with, as in India, settlements for the voluntary segregation of the worst cases should be instituted; where the numbers are relatively small, as in some of our colonies and dependencies, universal segregation should be enforced. In a lecture relating chiefly to the work done in the leper settlement on Robben Island, not far from Capetown, delivered at the house of the Hon. Mrs. Franklin on November 19th, Dr. Bayon said the Union Government had voted £150,000 to provide the settlement with laboratories for research work in regard to leprosy. Sir Malcolm Morris, who presided on the occasion, spoke of the pitiable condition of some lepers in London who found it difficult to find a place where to lay their heads. Moved by the unkindness with which they were treated, some benevolent persons proposed to establish a small institution where lepers could be segregated and properly looked after. The scheme, said Sir Malcolm Morris, had to be carried out in secrecy, for if it became known abroad that there was a comfortable home for such cases in London, there would be an influx of lepers from the colonies and from foreign countries. He thought it would be better to provide an institution for the treatment not only of leprosy but of other chronic diseases of a similar kind. In the discussion on Dr. Bayon's paper at the Royal Society of Medicine, Dr. Phineas Abraham agreed with Sir Malcolm Morris as to the danger of lepers from abroad being attracted by such a home as it was proposed to establish. He thought it should be an institution where every disfiguring disease of the skin would be dealt with. It seems to us that, leaving out of consideration the intention of the founders—which must, of course, be taken into account—a mixed institution of the kind suggested would be a standing negation of the idea of contagion on which the case for segregation rests. Disfiguring skin diseases do not cause the same horror as leprosy, which is "a name of fear." In the existing state of public opinion it is doubtful whether sufferers from skin affections, however disfiguring, would accept shelter under the same roof with lepers. And if they did, it cannot be denied that there would, at any rate, be some risk of their acquiring leprosy, and as they could not be compelled to stay in the home, it is conceivable that they might spread the disease outside.

ANTIMONY IN SYPHILIS.

While most investigators in chemotherapy have devoted their attention to compounds of arsenic, the claims of other drugs have perhaps been somewhat neglected. It is, therefore, interesting to notice recent research with antimony, a drug with certain chemical resemblances to arsenic. Not long ago Neisser suggested that it might possibly be of value in syphilis. Tsuzuki[1] conceived the idea of replacing the arsenic of salvarsan by antimony, and the benzol ring by tartaric acid, a substance which is well known to have affinities for certain bacteria, and

[1] *Deut. med. Woch.*, 1913, p. 985.

even to act as a nutrient medium for them. According to Ehrlich, the action of salvarsan on the spirochaete is due to the presence of (OH) groups which combine with the corresponding haptophore groups of the parasites. Tartaric acid also contains (OH) groups which may act in the same way. Hence, according to Tsuzuki, the action of these antimonial compounds may be explained on the basis of Ehrlich's side-chain theory. After experimenting with several compounds on rabbits inoculated with syphilis, Tsuzuki found that the best results were obtained with a combination of antimony oxide with potassium bitartrate and ammonium—SbO $(C_4H_4O_6)_2$ K $(NH_4)_2$ H_2O—to which he gave the name of "antiluetin." This substance was then tried in human syphilis with remarkable results. Details of 10 cases are reported, including primary, secondary, gummatous, and cerebral syphilis, in all of which the symptoms were greatly improved or disappeared. In several cases a cure was obtained with antiluetin after energetic treatment with mercury and iodide had failed, and one case of gumma which recurred after salvarsan treatment was treated by antiluetin. In a case of syphilitic optic atrophy the sight was improved. The drug is given by subcutaneous injection between the shoulders. The initial dose is 0.025 gram, soon increased to 0.05 gram, given daily or every other day until a total of 0.15 to 0.3 gram has been reached. If this is well borne, a further series is given. The dose required for *therapia sterilisans magna* is estimated at 0.75 gram. Tsuzuki concludes that antiluetin is a powerful antisyphilitic remedy, but that the best results are obtained when it is combined with mercury and iodides. Further experience with this new remedy will be awaited with interest, for, since antimony is less toxic than arsenic, it is not impossible that salvarsan may be dethroned by antiluetin.

BOVINE AND HUMAN TUBERCLE BACILLI.

PROFESSOR LYDIA RABINOWITSCH and Dr. Carl Dammann have published a report on recent work in continuation of the researches in which the former has been engaged for many years.[1] They collected specimens of sputum in 33 cases of adult tuberculosis, lung material from 5 further cases of adult tuberculosis, glands from 2 cases of tuberculosis in children, scrofulous glands from 18 other children, and material from one case of tuberculous peritonitis, and one case of primary intestinal tuberculosis. In each case the bacilli were cultivated on various media, and also injected into guinea-pigs, rabbits, and calves, and the strains carefully studied. All those derived from the sputum in the adult cases of pulmonary tuberculosis proved to be of human origin, and material obtained *post mortem* from pulmonary cavities yielded the same result. On the other hand, of the 18 bacilli from glands 12 proved to be human in origin, 5 bovine, and 1 was not typical of either form. The bacilli derived from the case of tuberculous peritonitis proved to be bovine, as did those from the case of primary intestinal tuberculosis. It thus appears that 11.66 per cent. of the sixty strains were bovine, while if the cases of children alone were taken into account the percentage was 29. The extraordinary care and accuracy which have always characterized the work of Professor Rabinowitsch are obvious again in this article, and even if the results did not coincide with those obtained by many British and Continental observers, including the Royal Commission on Tuberculosis, the facts as presented by these two capable research students would have to be accepted. As it is, few will be found to quarrel either with the way in which experimental results are stated, or with the important deduction that bovine bacilli are a real danger to children. In the prophylaxis of tuberculosis among the young, measures to prevent infection through cow's milk must therefore be given a prominent place. The two authors appear to consider it necessary to pasteurize children's milk or to kill the bacilli which it may contain by heat in some other way, but they do not discuss the wider question of the detection of infected milk and its exclusion from the market altogether, although, in the concluding sentence of their report, they say that the facts recorded show the imperative necessity of taking every means to prevent the infection of human beings with bovine bacilli.

[1] *Zeitschrift für Tuberkulose*, vol. xxi, Parts 1 and 2, 1913.

EUTHANASIA.

Is it ever right to release one hopelessly stricken by disease or injury from his suffering by what has been called "merciful murder"? From time to time we are told that this is a duty which a doctor owes a patient in agony which cannot be relieved by art. The question has often been discussed in the BRITISH MEDICAL JOURNAL,[1] and the view has consistently been maintained that the doctor must act in the spirit of the Hippocratic oath, and must in no circumstances give "deadly medicine to any one, even if asked, nor suggest any such counsel." Only the other day an unfortunate lady was pinned under the wreckage of the Marseilles express at Melun for eight hours before death—for which she asked—brought her relief. The case has again brought up the subject of euthanasia. The views expressed in reply to a question by the *Daily Mirror* showed a remarkable difference of opinion between medical men and others. Sir Frederick Treves declared that the idea of destroying human life in order to end suffering is monstrous and unjustifiable. Sir James Crichton-Browne's reply was to the same effect. The reply of a surgeon whose name is not mentioned goes to the root of the matter, and we therefore quote it: "It is a problem in which a very strong line must be drawn. Directly you waver in the least and admit justification, even in the most harrowing cases, you are on the way to creating an abuse which would be intolerable to a Christian world." On the other hand, it is remarkable that clergymen seem to hold human life less sacred than doctors. In reply to the same question, Archdeacon Sinclair telegraphed, "Anaesthetics quite legitimate." Bishop Welldon said, "There are circumstances that may excuse the violation of this rule" (of not abandoning life). The Rev. Percy Dearmer, D.D., speaks with a somewhat uncertain sound. He thinks it "a pity that in many hopeless cases, where much pain is endured by a patient, doctors should do their utmost to prolong the patient's existence, although of course it is their first duty to prolong life." His wife has a more decided opinion on the subject. She holds that "if the poor woman could not possibly have lived it would have been best for a doctor to have helped her out of her pain instead of letting her slowly die in torture." The Rev. C. H. Grundy, vicar of St. Peter's, Brockley, said: "If two doctors agreed that the case was hopeless, and that the poor woman was suffering indescribable pain, then merciful release should have been given to her and death might be hastened." Mr. William Archer thinks the medical man should be given the power to grant a patient's request for painless death if it is practically certain that he has no chance of recovery or being rescued. Mr. Sydney Holland would wish to be put to death if he were in such a position. Preferably he would ask a doctor to end his sufferings, stipulating that an anaesthetic should be used. He does not consider that his act would be morally wrong. But, we ask, has the doctor no moral responsibility in the matter? That is the question. It may be added that a bill making euthanasia with proper safeguards legal was before the German Reichstag some months ago. As far as we know it has been relegated to the limbo of proposals which never succeed in breaking through the *fatu aspera* of legislative parturition.

[1] See particularly BRITISH MEDICAL JOURNAL, June 11th, 1904; March 17th, 1906; and November 4th, 1911.

MEDICAL REMUNERATION AND THE SPECIAL PARLIAMENTARY GRANT.

In the address delivered at Glasgow by Dr. Cox, the Medical Secretary, which is reported in the Supplement for this week, he mentions the fact that the amount of the special parliamentary grant for medical benefit arranged about a year ago was only fixed for three years. The Chancellor of the Exchequer, in his address to the Advisory Committee on October 23rd, 1912, said that he considered a year's experiment would be useless, and that, therefore, the financial arrangements would be made for three years; at the end of that period the whole position would, he said, be reconsidered. When in 1915 the matter comes up again two distinct but closely allied considerations will undoubtedly weigh with Parliament, and may influence the Government and the Commissioners even before then: First, is the present medical service of the insured worth the money spent on it, looked at from the general standpoint, or could a better service be provided for the same amount? and, secondly, are the panel practitioners receiving too much or too little for the work which they actually do for the insured? Leaving aside the first question for the present, it must be obvious that the answer to the second question will depend very largely on the statistics furnished by the doctors themselves. It would be grossly unfair to take instances in which panel practitioners are said to be making as much as £1,500 a year from fees received for the insured, and to argue from such cases that the doctors are making fortunes out of the insurance, and are in fact too highly paid. Such instances, if they occur, are exceptional, and taking Mr. Churchill's figures (Supplement, November 22nd, 1913, p. 453) it would appear that the average number of insured persons to each panel doctor is 685, and that the average annual payment to each panel doctor must be a little over £200. In this connnexion an average has some value, though it is not possible to fix a uniform number of patients and to say that no practitioner can give adequate medical and surgical attention to any greater number, for much depends on the personal equation of the doctor, the character of the district in which the patients reside, and numerous other factors. Taking instances in which a practitioner has only as many patients as he can attend to properly and efficiently, or fewer, which must be the most general case, the question which the Government and the Commissioners will have to decide in 1915 will be, Is the present medical remuneration adequate to ensure good work, taking into account the altered conditions under the Insurance Act? The reply to this question will depend largely on statistics founded on the records kept by the panel practitioners themselves, showing the average number of attendances required by each insured person on the list. It has been urged as an objection to the capitation system that when a doctor receives an annual fee for every person on his list, whether well or ill, he is tempted to give as few attendances as possible to each patient that applies for treatment. The customs and traditions of the profession safeguard the individual practitioner from yielding to any such temptation; and, as a matter of experience, the smallness of the number of cases in which charges of neglect have been proved is evidence that the work is being done conscientiously. But we have a right to accept the objection so far as it lends support to the presumption that under a capitation system, at any rate, no unnecessary attendances are likely to be given or recorded. There are indeed, as we have pointed out more than once, grounds to fear that the records may seriously understate the work done. From various sources the statement comes that the panel practitioners are not very careful to enter up every attendance actually rendered. The impolicy and folly of such carelessness are evident. It is futile to chafe against the trouble of keeping records as if they were only for the benefit of statisticians. It is most directly to the personal interest of every practitioner that his records of work done should be full and accurate, and that every attendance should be marked on the record card. In no other way is it possible for the Government and the Commissioners to judge whether the profession is properly paid, and Dr. Cox's remarks on this point deserve most careful attention. It must not be forgotten, also, that the approved societies have a voice in the matter of medical remuneration. At the beginning of every year each approved society in a district has to enter into an agreement with the Insurance Committee as to the amount which shall be contributed to the committee out of the society's credit with the Commissioners for the medical benefit of its members, though if the Committee and the society cannot agree, the Commissioners may decide the amount. In order that every Committee and every society should not be compelled to draw up a separate agreement, the Commissioners issued a model. But the agreements are only for one year, and may be altered any year. The amount was fixed partly, no doubt, because of the insistent demands of the British Medical Association, but partly because it was believed that the societies would be able reasonably to afford the sum if the sickness claims did not greatly exceed the actuarial expectations. But many of the societies are now complaining that up to the present the sickness claims have shown a great increase, for which they are inclined to attach some blame to the doctors. The Friendly Societies Act, 1896, requires an annual audit of the accounts of the societies, and under the Insurance Act a complete valuation must be made every three years from the commencement of the Act so far as the State insurance section of the society is concerned; for the purpose of this valuation the Commissioners have to draw up tables from which the average sickness expectation can be calculated. It may be only a coincidence, but it is to be observed that the first valuation of the societies will take place at about the same time as the special parliamentary grant for medical benefit comes up for reconsideration. Already a large number of societies are anticipating the result of the first annual audit, depending on the experience of the first six months' working of the Act, and are asserting freely that with the present sickness rate they cannot afford to continue to pay the full amount towards the doctors' capitation fees, and that if they were left to administer medical benefit themselves they could do it for considerably less. They are, in fact, already working up their case, in view of the first triennial valuation and the revision of the parliamentary grant. If by any chance a society shows a surplus on valuation, the demand will probably be for medical attendance on dependants as an additional benefit, the cost of which, unless a special State grant is obtained, would fall entirely on the private funds of the societies. On the other hand, if the valuation shows a deficit, there will have to be either a levy on the members, or an increase of contributions, or a reduction of sickness benefit, or some other method of economizing approved by the Commissioners must be found. Among these methods will undoubtedly be an attempt to reduce the amount now contributed by the societies to the doctors. It will be said that increased sickness claims do not mean increased work done by the doctors, but only a greater readiness to grant sickness certificates. It might indeed happen that though the present parliamentary grant of 2s. 6d. was retained or even increased, yet the increase might be more than counterbalanced if the societies on their side succeeded in lessening their contribution. The whole attention of Parliament, the Government, the Commissioners, the societies, and the public generally, will be focussed on the records of work done as recorded by the doctors themselves. If the records are imperfectly kept, and actual attendances

omitted through carelessness, the profession will be throwing away its own case. So important is this matter that every Local Medical Committee and Panel Committee ought to make it its business to see that every panel practitioner keeps his records fully and properly, as the whole profession may suffer through the carelessness of a minority.

TUBERCULOSIS IN AN AMERICAN ARMY HOSPITAL

STATISTICS of the results of treatment of tuberculosis in civil hospitals and sanatoriums have been lavishly supplied of late years, and a certain uniformity is to be noticed amongst them, generally showing a very high percentage of recovery among incipient cases, but not as a rule affording much evidence of the duration of freedom from relapse. Attempts have been made to record "completed cases" by the medical authorities of the United States Army, and we gather, from the reports for 1911 and 1912, issued by the medical officer in charge of the General Hospital at Fort Bayard, in New Mexico,[1] that a large number of consumptive soldiers are treated in that institution, and that the results are by no means so encouraging as they would appear to be in the civil hospitals to which we have referred. Although classed as "completed," such cases can hardly be regarded as permanently cured. By far the larger number of the patients were young adults under 30, and in many instances the disease was complicated by other than pulmonary manifestations. The hospital itself is an extensive establishment, standing in 40 acres of ground, and providing its own farm and vegetable needs. The latitude of New Mexico corresponds roughly with that of Cairo. Some light is thrown upon the difficulties with which the United States army medical officers have to contend in dealing with early tuberculosis. It would appear that discharge on account of early tuberculous disease entitles the young soldier to a pension, and this often leads to abuse, calling for more than ordinary care in the preliminary diagnosis. Furthermore, there is no power of compulsory detention, so that the careless patient is free to undo all the good that he has received at the hands of the State officials; and when hopelessly broken down by his own want of caution, he becomes entitled to admission to another department of the hospital —the Soldiers' Home—where in many instances he remains, until his case is indeed "completed."

THE INSURANCE DIFFICULTY IN GERMANY.

A VERY disagreeable impression has been produced in Berlin by an incident which came to light at a meeting of the *Aerztekammer* for the province of Brandenburg and the city of Berlin on November 15th. The business of the meeting included the presentation of a draft embodying certain principles which the chairman, Dr. Moll, hoped would prevent, or at all events minimize, conflicts between the advisory doctors to the insurance societies and the doctors who would take service for the societies after January 1st. It was proposed that all contracts should be submitted to the Contract Committee for approval before being signed by the doctors, and it was stated that this committee would not approve the contracts with the General Insurance Society of Berlin (Allgemeinen Ortskrankenkasse der Stadt Berlin) unless at least 200 new doctors were admitted to service. Before a resolution to ratify the principles was put to the meeting, the chairman said that, though the conditions of service were not ideal, they represented an improvement as compared with past conditions. In the discussion on the subject Dr. Kuthe asked two questions which caused a great deal of excitement. He asked, first, whether the very low capitation fee of 5s. had been fixed at private negotiations between a prominent member of the executive committee of the Berlin doctors' central union and the representatives of the General Insurance Society of Berlin, without the knowledge or sanction of the delegates; and, secondly, whether this same individual communicated the results of these negotiations to the chief insurance office without informing the executive of the doctors' union. He did not attempt to hide the identity of the person in question. Other speakers angrily protested that they had been betrayed by one of their leaders. The fee of 5s. it was said was much too low, and had been accepted only because the conditions affecting the freedom of the profession were fairly satisfactory and the other conditions of service could be regarded as a reasonable compromise, and they were told that this was the most they could expect to get at present. The members were highly indignant on learning that a member of their own body, who was also a member of the Contract Committee and Chairman of the Federation of Insurance Doctors of Berlin, was stated to have accepted the low fee without remonstrance. The temper of the meeting rendered it clear that an official reply to Dr. Kuthe's questions must be forthcoming. The chairman admitted that Herr von Gostkowski, the official representative of the chief insurance office, had informed him that a doctor with whom he had discussed matters had agreed that 5s. was a reasonable capitation fee, and had proposed a contract of long duration at this rate. On being asked whether the doctor was Geheimer Sanitätsrat Dr. Köppel, Herr von Gostkowski had not denied this. The chairman added that the delegates of the Central Union of doctors of Berlin had not been officially informed of this contract, and that Dr. Köppel, who had pledged himself in writing to submit all contracts for approval to the Contract Committee, had threatened that he would send copies of this contract to doctors for signature without the consent of the Contract Committee, should the latter withhold its consent. The Executive Committee of the Berlin Medical Ethical Society, the Executive Committee of the Federation of the Berlin Medical Societies, and the Hansa District Medical Union, have issued a notice calling upon Dr. Köppel to explain his conduct. The notice describes this conduct as a "breach of faith." Dr. Köppel, who has already resigned his position in the Aerztekammer, is further called upon not to exercise any of the functions of his other offices, in so far as they deal with matters affecting the welfare of the profession. This notice is printed in large type on the front page of the *Berliner Aerzte-Correspondenz* of November 22nd, 1913.

"COMMITTEE FOR THE CARE OF DEFECTIVES."

AT the present time local authorities under the Mental Deficiency Act are discussing the way in which the Committee for the Care of Defectives should be constituted under the Mental Deficiency Act, 1913. The Medico-Psychological Association of Great Britain and Ireland on November 25th expressed the view that the committee in each area should be based upon the existing Asylums Committee, with such additions as are required by the Act, and that the Asylums Committee should still exist as a separate committee for dealing with asylums under the Lunacy Acts. Under the Mental Deficiency Act the local authority—that is, the council of a county or county borough—can either constitute the committee for the care of defectives in this way or appoint an entirely new committee. The Act requires that the committee for the care of the mentally defective shall consist partly of members of the county council appointed by it, and partly of persons not members of the council, but either poor law guardians or those having special knowledge and experience with respect to the care, control, and treatment of defectives.

[1] *Record of Completed Cases of Tuberculosis at the United States Army General Hospital, Fort Bayard, New Mexico.* 1911-1912. Washington: Government Printing Office. 1913.

Ireland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

Housing of the Working Classes.

The Local Government Board inquiry into the housing of the working classes in Dublin was opened on November 18th.

Mr. O'Conor, Local Government Board Inspector, said the inquiry was intended to ascertain how far the existing accommodation for the housing of the working classes was inadequate in view of their ordinary requirements; the general circumstances of the working classes in Dublin, with special reference to the amount of rent they can reasonably be expected to pay for suitable accommodation; to what extent it is possible, by the exercise of the powers granted by the existing law, to remedy the housing conditions of the working classes in the city; the finance of the housing schemes which had been carried out by the municipal authorities or other agencies for the city workers, and the class of workers accommodated by such schemes; and, further, what measures (including legislation) should be suggested for dealing with the housing problem in Dublin, and the probable cost of any scheme so suggested.

Sir Charles Cameron, Chief Medical Officer of Health, told the committee that there were 5,712 tenement houses in Dublin. One of the corporation's chief duties was to guard against overcrowding in these houses and to see that their sanitary condition was satisfactory. The corporation had parliamentary power to regulate the number of people living in these tenements; the Act required that each resident should have 320 cubic feet of space. Though this Act had been in existence since 1890, no register showing the cubic feet of each tenement was in existence. The corporation's officers inspected the houses about once in every six or eight weeks for overcrowding, but the population of these houses was very changing, and Sir Charles Cameron admitted that, in regard to overcrowding, the corporation's by-laws had not been strictly carried out, adding that this could not be done without an increase in his staff. He thought that about one-half of the 5,712 houses were supplied with sufficient accommodation, according to the by-laws; he could not say how many were unfit for habitation, but thought that at least 2,000 of them really required to be rebuilt. He hesitated to condemn areas as insanitary so long as no other dwellings could be found for the persons who would be dispossessed, and he attributed much of the unsatisfactory state of the tenement areas to the corporation's difficulty in inducing or compelling the owners to comply with the regulations; he asked for larger parliamentary powers. Summarizing his suggestions, he said that 1,000 of the 5,712 houses should be destroyed and about 2,000 rebuilt; 5,000 of the single-room dwellings, in which 21,000 Dublin families resided, should be improved, not closed, and about 5,000 new dwellings should be built on the outskirts of the city. Several bad slums had disappeared and the death-rate of the city had declined.

We cannot profess to report the evidence given to the committee, which deals largely with details of the conditions in various parts of Dublin, but it may be noted that witnesses have said that worse slums exist in other large towns, specially London, than exist at present in Dublin, and it has been alleged that the Dublin Corporation has already done more for the housing of the poor than any other city; Dublin, it was said, had housed 2.8 per cent. of the population, whereas London had only provided for 1.2 per cent.; Liverpool, 1.7; Leeds, 0.04; and Wolverhampton, 0.06.

Mr. William O'Brien, the Vice-President of the Dublin Trades Council, expressed the opinion that the corporation should start a policy of building houses, and at the same time compel owners of slum property to keep it in repair. At present the manner in which the corporation was carrying out its duties regarding slum property was far from satisfactory.

Evidence as to overcrowding has been given by certain Roman Catholic clergymen and others. The Chairman has announced that he hopes to conclude the inquiry early next week.

Dental Clinics.

At the council meeting of the Women's National Health Association last week one of the secretaries of the National Education Board stated that the first definite application made by the Commissioners to the Treasury for funds for dental inspection was in connexion with the estimates for 1912–13. The sum asked for was £13,530, to cover the cost of four clinics in Dublin and Belfast, three in Cork, two in Limerick and Derry, and one in each other town of over 9,000 inhabitants. The response of the Treasury was an offer of £7,500, on condition that an equal amount was contributed from local sources. The Commissioners discussed this offer at two conferences with representatives of the dental profession and with the managers of the national schools, and decided that it was practically impossible to work the scheme on the lines laid down by the Treasury in the absence of statutory authory on the part of local bodies in Ireland to levy a rate for the purpose. They, therefore, appealed to the Government to allow them to spend the £7,500 in the establishment of dental clinics in large centres as a tentative measure; the Government, however, refused to surrender the principle of £1 for £1. A scheme was then drawn up for sixteen clinics in the large towns at a total cost of £16,041, half to be provided by the municipal authorities. The Government in July, 1912, objected to certain details in the scheme—such as the whole-time employment of dentists, the renting of premises, and the employment of nurses and caretakers—and it was suggested that the children should be treated at the dentists' own surgeries. The dentists opposed this suggestion, and a proposal to have the Dublin children treated at the Dental Hospital came to nothing, as did also a request to the Dublin Corporation to make a grant. At the end of last November the Commissioners made a renewed application for £15,000 to defray the cost of dental clinics; this was refused, and the estimate for this year was reduced to £5,000, to be expended on the terms of a local equivalent. A circular was issued last December to all managers of National Schools, inviting them to submit schemes with the least possible delay. Some local interest was aroused, and before the close of the financial year seven schemes—providing for the establishment of fourteen clinics—were sanctioned, and £263 2s. 6d. was granted from the vote of 1912-13. Thirty-two schemes, involving an expenditure of £953 6s. 3d. from the vote during the current financial year, have been sanctioned, but it appears likely that much of the £5,000 provided by the Treasury will remain unspent; £397 10s. is appropriated in aid of the scheme promoted by the Women's National Health Association, which provides for the establishment of five clinics in Dublin and its vicinity, and of one each in Cork, Antrim, and Naas. The services of dentists and doctors in connexion with a scheme started by the Children's Aid Society in Belfast are given free; the clinic was opened in the middle of April last, and up to the end of September 463 children received treatment, involving 1,559 operations. In the 720 dispensary districts in Ireland a great many of the medical officers are quite competent to give dental treatment to the children.

Dublin University Biological Association.

At the opening meeting of the thirty-ninth session of the Dublin University Biological Association, on November 22nd, Mr. Seton Pringle, F.R.C.S.I., delivered his inaugural address as President. Its subject was chronic intestinal stasis, and the address was fully illustrated by lantern slides. He first described the various bands and kinks frequently found in connexion with different parts of the alimentary canal in connexion with intestinal stasis; he gave reasons for the belief in their congenital origin, and due to abnormal fusion of folds and layers of the peritoneum, and disputed Lane's theory that they are the result of the kinking and stasis. He admitted that these membranes might exist in certain cases without producing any symptoms of stasis. With regard to treatment, he advised local plastic operations in the milder cases, and, in the more severe, partial or complete colectomy; he condemned the operation of ileo-sigmoid-ostomy. Dr. Gray of Aberdeen, in proposing a vote of thanks, spoke of his own experience in these cases, and agreed with Dr. Pringle in the theory that they were congenital.

He condemned ileo-sigmoidostomy and the various operations of stitching ptosed viscera, as he considered that the adhesions formed always stretched again and the ptosis recurred, except, perhaps, in the case of nephropexy. Mr. Blayney (National University), Professor A. F. Dixon, and Dr. Lumsden also spoke. After the meeting Dr. Harvey, the out-going President, entertained a large company at a smoking concert in his house.

STAMPING OF MEAT FOR SALE FOR RATING PURPOSES.

The new public abattoir for Belfast with all the most recent improvements is now in full working order, and all private slaughter-houses have been abolished. The Chairman of the Markets Committee (Dr. H. O'Neill) has appeared with the chief veterinarian of the City Council before several public boards and asked them to adopt resolutions that all flesh meat supplied to these institutions must be stamped with the corporation stamp. The deputation has been singularly successful, and the following institutions have agreed to issue an order in compliance with the request:—The Union Workhouse with a consumption of 3,098 lb.; the Belfast Lunatic Asylum, 1,347 lb.; the Royal Victoria Hospital and Throne Hospitals, 4,055 lb.; the Belfast Prison, 500 lb.; the Charitable Society, 153 lb.; and the Purdysburn Fever Hospital, 390 lb.

Where large and leading institutions set the example smaller ones and private purchasers are sure to follow.

Much of this reform is due to the untiring energy and care of the Chairman of the Markets Committee, who has for so long, in season and out of season, insisted upon reformation in the older methods of procuring a meat supply.

Scotland.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

THE WATER SUPPLY OF EDINBURGH.

At a meeting of the Edinburgh and District Water Trust on November 17th, a letter was read from Professor James Walker, of the Chemistry Department, University of Edinburgh, regarding the Fairmilehead filters. The professor, in his report of July 19th, had referred to certain occasions on which the filters had been found not to be working efficiently, and his letter in reply to inquiry stated that, on the occasions referred to, the filters were working in the ordinary routine, and were not under experimental conditions. Since the date of his last report he had examined fourteen samples of the water direct from the filters and seven samples from the tank. The filters during the period were working under checks and controls detailed in that report, and the samples were found in each case to be satisfactory.

EDINBURGH OBSTETRICAL SOCIETY.

At the meeting of the Edinburgh Obstetrical Society on November 12th the following office-bearers were elected:

President.—Professor Sir Halliday Croom.
Vice-Presidents.—Dr. G. Barbour Simpson and Dr. G. Keppie Paterson.
Treasurer.—Dr. John McGibbon.
Secretaries.—Mr. E. Scott Carmichael and Dr. R. W. Johnstone.
Librarian.—Dr. Lamond Lackie.
Editor of Transactions.—Dr. James Young.
Members of Council.—Professor McKerron, Aberdeen; Dr. J. W. Keay, Dr. H. Oliphant Nicholson, Dr. H. M. Church, Dr. Haig Ferguson, Dr. Angus Macdonald, Dr. Berry Hart, Dr. Hugh Davidson.

JUBILEE INSTITUTE FOR NURSES.

At the quarterly meeting of the Council of the Queen Victoria's Jubilee Institute for Nurses, held in Edinburgh, it was shown that the Council were directly responsible for the maintenance of ten Queen's nurses and twenty candidates receiving instruction in the training home. Six nurses had completed their training during the three months and were engaged for district work at Keith, Lochgelly, Midcalder, Elgin, Hamilton, and Alexandria; 1,621 cases had been nursed in Edinburgh by the nurses from the training home, necessitating 31,161 visits, and 506 cases remained on the books at the end of the quarter.

England and Wales.

[*FROM OUR SPECIAL CORRESPONDENTS.*]

NEWCASTLE-UPON-TYNE.

APPOINTMENTS AT THE COLLEGE OF MEDICINE.

At a recent meeting at the College of Medicine the following were nominated to the University of Durham for lectureships in the respective subjects: Diseases of Children, Dr. Ogden Watson Ogden; Diseases of Skin, Professor R. A. Bolam; Diseases of Throat and Ear, Dr. Samuel S. Whillis; and as Lecturer on Surgery, Mr. George Grey Turner. For many years there has been a close connexion between the College of Medicine and the Royal Victoria Infirmary. By these appointments not only is that connexion further fostered, but by the appointment of Dr. Ogden the Children's Hospital is brought into immediate touch with the medical teaching in the College of Medicine.

THE CLINICAL SOCIETY.

On November 21st Professor George Murray of Manchester gave an address on the clinical significance of spontaneous haemorrhage to the members of the Clinical Society. The meeting, which took place in the College of Medicine, was well attended by members of the society and by past and present students of the college, and the address was highly appreciated by all who heard it. In the evening, at the Station Hotel, Professor Murray was entertained to dinner by the members of the Clinical Society. Under the presidency of Dr. D. Wells Patterson, 126 sat down to dinner. In proposing the health of "Our Guest," Dr. Patterson stated that it was in Newcastle that Dr. Murray did the work on the thyroid gland upon which his reputation was largely founded. Professor Murray, in replying, alluded to the happy years he had spent in the infirmary and in practice in Newcastle-upon-Tyne (his native city), recommending his hearers, as he said he was wont to recommend his students in Manchester, to remember that the golden years were those between 25 and 35, for later on fewer opportunities occurred for sustained work. Dr. Gordon Bell, in an able speech, submitted the toast of "The Trade and Commerce of the Tyne," to which the Lord Mayor of Newcastle and the Sheriff replied. Dr. Slade responded to the toast of "The Clinical Society," proposed by Mr. Beckingham.

OUTBREAK OF ACUTE ENTERITIS.

During the last fortnight there has been a sudden outbreak of acute enteritis in the east end of the city. In Heaton alone within two days there were upwards of 30 cases. At the district police office 12 of the men and 3 of the boys were overtaken with the malady. They all became ill within a few hours of each other, and so alarming were the symptoms—vomiting, acute diarrhoea, in some high temperature, and in all extreme collapse—that for several days the services of the medical officer and Sir Thomas Oliver were much in requisition. The outbreak was found to be due to the milk taken with one particular meal. Dr. Kerr, the medical officer of health, finally succeeded in tracing the outbreak to its source. The animal was destroyed, and no further cases of enteritis have occurred. Owing to the promptitude with which the medical officer acted, the district has been spared the extension of the disease.

AT the annual meeting of a local nursing association Dr. C. E. S. Flemming requested the committee to alter or do away with the rule which prevented the midwife attending any unmarried woman in her confinement. He pointed out that the nursing association had now created for itself a monopoly, as in such a district no midwife could support herself in face of the competition of a nurse maintained by charity; as there was no other skilled attendance available, except possibly the medical man, the committee were no doubt unconsciously and unintentionally abusing their monopoly. This abuse was more marked now that these unfortunate women were by law, as shown in the Insurance Act, recognized as deserving or, at any rate, requiring assistance at the time of their confinement.

Special Correspondence.

BUDAPEST.

Cholera in Hungary.—Insurance Companies and their Medical Advisers.

In spite of the stringent precautions adopted throughout Hungary—particularly along the frontier—in consequence of the outbreak of cholera in the Balkan States, sporadic cases continued to occur for some time in different parts of the country. The most probable route of infection is the Danube, which has before this been the means of introducing cholera into Hungary; and consequently, as the commerce is very great between the cities on its banks and the seaport towns of Roumania, the State prohibited the carrying of wool, bedding, clothing, etc., by any ship trading in these waters. This prohibition extended to the importation by rail of fruit from Roumania and Servia; whilst all travellers entering Hungary from any part of the Balkans were obliged to submit to a five days' quarantine. The result of these regulations is that even in districts where cases of cholera have occurred it has been possible to check the spread of infection by the prompt isolation of all suspected cases. These precautions have been fully justified by the fact that in almost every case the infection was traced to persons or goods coming from one or other of the Balkan States; in almost every instance the disease proved fatal. Lectures on the signs by which cholera may be recognized and the means by which it may be prevented were given in the smaller towns and villages of Hungary, a step which, combined with the warning posters exhibited in the more important towns and cities, made such an impression upon the public that medical aid is now called in even in mild cases of gastro-enteritis, a disease which is frequently mistaken for cholera. Finally, it only remains to be added that in every large town throughout the kingdom certain buildings have been set aside to serve as emergency hospitals in case of an epidemic.

In the year 1899 the position of the medical profession with regard to insurance companies was discussed at a national Congress of the Hungarian Medical Association, when certain rules were laid down for the guidance of doctors. It was then decided that the charge for a medical certificate should be 10 crowns (8s. 4d.), if the patient's insurance money was less than 20,000 crowns (£833), and 20 crowns (16s. 8d.) for sums exceeding that amount. At the same time a rule was made that no *post mortem* or family doctor's certificate should be given in any circumstance to any insurance company. Unfortunately, it was found impossible at that time to deal in detail with every aspect of the relations between the insurance companies and their medical advisers; and it has now become necessary for some further and more definite rules to be laid down upon the subject. The annual meeting of the Hungarian Medical Association, which was held at Trencsén-Teplicz, the well-known health resort, had under consideration the following proposals: That a syndicate of members of the Medical Association and the different Hungarian insurance companies should be formed, so that they should bind themselves to work together for a period of ten or twelve years, and observe certain regulations drawn up by themselves. It was also proposed that a permanent committee, consisting of three members of the Association and three members of the Insurance Committee, should be formed to enforce the observance of these regulations and reserve to themselves the right of judgement in arbitrary cases. The medical advisers to insurance companies are to be appointed by the directors of the head offices of the respective companies, never by the branch offices. For example, the doctor of an English insurance company having its head office in London, but with branches in Hungary, will be appointed by the London directors, acting, of course, on the advice of their colleagues in Budapest. This method would have the advantage of stopping many abuses. At the present moment every Hungarian insurance agent has the power of appointing as many "confidence doctors," as they are called in Hungary, as he pleases. It happens frequently, for instance, that when a young doctor in a provincial town proposes to insure his life for the sum of 5,000 crowns the local agent obtains for him an appointment as "confidence doctor" to the local branch office, and in return the doctor examines the candidates for insurance until the arrival of another medical man, in whose favour he is quietly dropped. The result of this system is that some insurance companies in small towns have as many as eight or ten "confidence doctors." There is good reason to believe, however, that the present state of affairs will not last much longer, since the question is to be discussed in all its bearings at the coming congress, and there seems to be a unanimous desire on the part of the medical profession to remove all control of the nomination or dismissal of insurance doctors from the hands of insurance agents or agencies. A resolution will be passed, therefore, to the effect that in future an insurance doctor can be deprived of his appointment by the directors of the central office of the company alone, and then only if there is some grave cause for complaint against him; and the doctor, moreover, will have the right to demand the reason of his dismissal from the permanent committee, in whose hands the ultimate decision will rest. The fees for the examination of candidates for insurance are to be fixed at the following rates: 10 crowns if the insurance money does not exceed 5,000 crowns; 15 crowns for sums between 5,000 and 10,000; and 20 crowns for all sums above 10,000 crowns. This rate of fees only holds good if the candidate undergoes his medical examination in the doctor's office; if it takes place in his own home, the latter has the right to demand two crowns in addition to the usual fee. Should the patient be out when the doctor calls, a fee of three crowns is to be paid him by the company as a compensation for the loss of time.

Correspondence.

THE CRAZE FOR APPENDICECTOMY.

Sir,—Dr. Hutchison has done good service by the letter he has addressed to you on "the craze for appendicectomy"—I hope I have spelt it aright. There is nothing in it that many of us could not fully endorse, but I am still more glad to see Mr. Lockwood's reply, because it is the first time that I remember to have seen nailed to the mast, so that all who run may read, that there are difficulties in the diagnosis of many a case of appendicitis, and we do indeed want our experience pooled on this head, as Dr. Hutchison urges. I think one may say that one never hears, from the operative side, of the mistakes made in the diagnosis of appendicitis, except it be that appendicitis exists and has not been diagnosed in time for the surgeon to be of service. Far be it from me to suggest that this is not an important aspect of the question, but now my point of view is otherwise, and Dr. Hutchison's question is the pertinent one—namely, How often does a surgeon admit that an appendix is perfectly healthy? A large error of refraction seems apt to be latent in the eye upon such occasions.

But now that surgery can do so much so successfully it ought to take upon its own shoulders the responsibility of its mistakes, or how are we to learn to make right diagnoses? And the public ought to know what we know in this matter. This is not so as yet.

A few months ago a shrewd man brought his wife to me to know if she had appendicitis, because they were going on a long yachting cruise. The case was probably such a one as Mr. Lockwood alludes to, of colitic origin, and she was allowed to go, but the husband was quite astonished when I told him I was not sure, and that in many a case the best we could do was to look and see. Is it not so? I can recall at the moment a suppurating gall bladder confidently affirmed to be a case of appendicitis, a perforating gastric ulcer, an ovarian tumour, arenal calculus—all diagnosed wrongly; and there must be many who have knowledge of operations where the state of the appendix was not adequate to explain the symptoms upon which the diagnosis was made. It is in this *difficulty of diagnosis* that the craze lies. The symptoms of even a fulminating case may be so masked or equivocal that we are often carried away,

and that an operation is prescribed as of immediate necessity, without any careful consideration of other possibilities.

I shall make the confession, too, that I am only too thankful to the surgeon that he now mostly relieves me of the necessity of making the diagnosis or suggesting the treatment in these cases. I should certainly not take it to heart if I never saw another. Indeed, I feel inclined to advocate the introduction of a new rite for all babies, that by the elimination of this perplexing cause of doubt we may the better be able to differentiate, and advance the diagnosis between other varieties of stomachache. Till that time comes I would certainly join with Dr. Hutchison in asking for more definite knowledge of the percentage of mistaken diagnoses that occur. It might help us poor folk who cannot look and see, and who yet must sometimes render first aid, to have a little more confidence in the opinion that we give in an exceedingly anxious lot of cases.—I am, etc.,

London, W., Nov. 26th. JAMES F. GOODHART.

SIR,—The large measure of justice in Dr. Hutchison's charge against surgeons leads one to reply that the weight of the best surgical opinion is on his side in protesting against indiscriminate appendicectomy for chronic pain in the right iliac fossa. Five years ago his letter would have been more pertinent. It is a misfortune that his plea is still needed at all.

Now that we recognize the multiplicity of causes of chronic pain in the right lower segment of the abdomen (where there have been no acute attacks), a dogmatic diagnosis of appendicitis in such a case spells empiricism. But this does not mean that an operation is a mistake in a case of chronic pain in the right iliac fossa which has not yielded to medical treatment. It means that the surgeon must enlarge his vision and his incision, and when this is done exploration offers for such cases the best hope of relief.

In the past attention has been too narrowly confined to the appendix as a natural but unfortunate result of its supreme importance in acute abdominal conditions. The first thing necessary in order to attain the scientific accuracy that Dr. Hutchison naturally desires is that we should critically examine at operation all the organs that may possibly have caused the pain. The next is that we should agree on the distinctions between pathological inflammatory adhesions and peritoneal adhesions of antenatal and non-inflammatory origin, due to variations in the process of peritoneal fusion *in utero* that adapts the intestinal tract to the upright posture.

The literature of "Jackson's pericolic membrane" shows how far surgeons are from having learnt this lesson. Old inflammatory adhesions are tough, fibrous, opaque, and not very vascular. Congenital peritoneal adhesions are elastic, filmy, translucent, and well supplied with fine blood vessels. And yet, owing to a widespread failure to appreciate these differences, papers are still continually appearing in which the inflammatory origin of Jackson's membrane is taken for granted.

When prolonged medical treatment has failed to cure chronic colitis, it will often be found at operation that the mechanics of the colon are primarily at fault, owing to a persistence of the ascending mesocolon and consequent abnormal mobility. Removal of the appendix, even if it has been involved in the colitis, will do nothing to remove the cause, but imitation of Nature's usual method by suturing the mobile proximal colon back into its place in the right loin will often restore a chronic invalid to health.—I am, etc.,

Manchester, Nov. 22nd. JOHN MORLEY.

SIR,—The readers of the JOURNAL are indebted to you for opening its columns to a correspondence upon this subject, so usefully started by Dr. R. Hutchison in his letter in the issue of November 15th.

Many of us in physicians' practice are accustomed to see from time to time cases in which the appendix has been removed, or the abdomen opened, for the relief of symptoms which are due to a cause outside the abdominal organs, and which a fuller and more exact clinical examination of the patient probably would have revealed.

I should like to take this opportunity of adding to Dr. Hutchison's three classes of cases a fourth class, in which the removal of the appendix, or the opening of the abdomen, has been advised with doubtful justification; I refer to that class of case in which the cause of the abdominal pain or symptom is due to disease of the nervous system.

I have under my care at the present time two cases of organic disease of the spinal cord, in which the abdomen has been opened without conferring any relief. The first is that of a patient with intraspinal lesion (probably tumour); his earliest symptom was pain of a troublesome and persistent character in the right lumbar and iliac regions. A normal appendix was removed about two years after the onset. The patient is now paraplegic. The second is a well-defined case of locomotor ataxy. This patient suffered from gastric crises at the commencement of the disease for which the abdomen was opened in the epigastric region.

These are merely two recent examples of a proceeding similar instances of which could no doubt be recorded. My contention is that in neither instance was the operation justifiable, as a more complete clinical examination would have revealed the probable spinal cause of the symptoms.

One is disinclined to refer to the scores of obviously neurasthenic women whose kidneys have been "anchored," or whose stomachs and wombs have been "fixed" to the abdominal wall by operation, for the purpose of curing a disease the treatment of which lies well outside the scope of surgery. Your readers will no doubt recall many examples of this kind.—I am, etc.,

London, W., Nov. 25th. W. ALDREN TURNER.

SIR,—As the only replies to Dr. Robert Hutchison's letter as to the necessity for appendicectomy have been two from consultants in the JOURNAL of November 22nd, the following notes from a general practitioner in a country district may have some interest.

To shorten this letter the following signs are used: A = first attack; B = subject to recurrent attacks of pain in right iliac fossa; C = treated at home till subsidence of acute symptoms; D = I was present at the operation; E = ended fatally.

CASE I.—Boy aged 7; A. Mother suffering from influenzal gastritis at the same time; hence no operation on boy till after third day of illness; appendix then found to be almost cut in two by bands of adhesive peritonitis; E.

CASE II.—J. M., male, aged 25; platelayer; B; C. No return of symptoms in fifteen years.

CASE III.—P. B., aged 41; postman; B, with diarrhoea; C. Fifteen years without return of symptoms.

CASE IV.—C. M., male, aged 20; A; C. No symptoms of appendicitis since, but dyspeptic, and has had lead colic. Eight years since operation.

CASE V.—Mrs. S., aged 38; A; C. Coincidently a small right ovarian cyst discovered before operation; has been perfectly well since—eight years; D.

CASE VI.—A. B., cook; B, and epistaxis; becoming more frequent and severe; C. Since operation free from all symptoms for ten years.

CASE VII.—J. A., male, factory hand, aged 26; B; C, and constipation. Operation; well ever since.

CASE VIII.—Mrs. P., aged 70; A (?). When first seen an abscess was bulging up in the right iliac region. Operation within six hours; opened and drained, appendix not removed; perfect recovery, well ever since—six years; D.

CASE IX.—J. R., boy aged 9 years; A; with rest of family ill from eating "cocoanut" sweets. Appendicitis not diagnosed for some days; then operation; pus found to have tracked to left side of pelvis; eventual recovery, well ever since—seven years.

CASE X.—M. E., girl aged 12. Faecal vomiting present when first seen. I was told she had been subject to bilious attacks for many years, and this was one of them. Immediate removal to hospital and operation; E.

CASE XI.—Mrs. C., aged 28; A; C. Well since operation; normal pregnancy a year after operation, though many adhesions were found.

CASE XII.—G. C., school teacher, aged 29, male; A. On Tuesday at work, had sharp abdominal pain; sent for me on Wednesday; acute appendicitis diagnosed; operation same evening; appendix found gangrenous and peritonitis present; E; D.

CASE XIII.—D. W., girl, aged 13; thin and puny; B; becoming more frequent. Mother thought it was "her courses hanging about her." Well ever since operation, and has developed remarkably quickly into a strapping, rosy-cheeked young woman.

CASE XIV.—G. D., girl, aged 12; small for her age; B; seen first in a mild attack. Well since operation (9 months). Her mother

had a severe attack 12 months before when away from home. Operation, and complete recovery since.

Case xv.—A. A., boy, aged 3½ years. Attended for two days by district nurse; treated for bilious attack. When I saw him, bilious vomiting, light stools, subsequently slight jaundice; symptoms cleared up, and the child's appetite returned and temperature was normal till a fortnight after the commencement of the attack—then a message from his mother that he was worse, and a swelling was found to have developed in the left inguinal region. Operation: swelling found to be localized pus; signs of recent appendicitis; well since—6 months.

Case xvi.—Mrs. W., aged 50; B, and constipation and vomiting; sent to hospital. After operation, was told it was malignant and inoperable. As the condition remained as before, admission to another hospital was procured, and the original diagnosis of appendicitis confirmed. Many adhesions found—one, very thick and strong, round the ascending colon. Well ever since operation—9 years.

Case xvii.—E. R., girl, aged 12; tuberculosis; B and constipation; operation: appendix reported to have been chock full of threadworms. Well since—6 weeks.

Case xviii.—K. M., married woman, aged 36; A and constipation; acute febrile symptoms subsided after operation, but it was evidently the first indication of a general infection by *B. coli*, which gave other manifestations subsequently. The patient made a slow recovery from the latter; 4 years since operation.

Case xix.—M. D., girl, aged 12; A; first seen twenty-four hours after commencement of attack; sent to hospital immediately, though symptoms had slightly abated; operation performed there twelve hours after arrival. Appendix commencing to show signs of gangrene; well ever since—3 months.

Case xx.—E. G., aged 26; B, getting more severe, sent to hospital; while waiting for operation had more severe attack.

Fifteen of the above cases are still living in the neighbourhood, and one is in Canada and one in London.

In addition, of 3 other cases sent to hospital as appendicitis, 1 proved to be a pyosalpinx, and 2 after being watched were sent home again as not sufficiently definite to justify operation.

Cases of pneumonia with pain in the right iliac region are fairly numerous, and I have had a case of pyorrhoea alveolaris accompanied by the same symptoms, but there has been no recurrence of the abdominal pain after the primary disease has been cured.

The first case on my list was in London soon after I qualified. The others are in this neighbourhood. It is rather noticeable that the age incidence is getting lower. —I am, etc.,

Hoddesdon, Herts, Nov. 24th. John E. B. Wells.

SPECIAL HOSPITALS.

Sir,—Correspondence in journals and newspapers involves so much waste of time and is so prolific in misunderstandings and misinterpretations that one would be glad to allow Mr. Bickerton's letter on the above subject to go unanswered, but silence on some of the questions raised would probably be misconstrued, and I therefore ask for space in which to reply.

The Eye and Ear Infirmary Pathologist and Laboratory.—I endorse everything that Mr. Bickerton has said with regard to the good work of my friend, Mr. Harcourt; but Mr. Harcourt would be the first to acknowledge that the opportunity he has had for the practical study of ophthalmic pathology came to him from the laboratory of the Liverpool Eye and Ear Infirmary and his appointment as pathologist in 1907. Mr. Harcourt's demonstratorship at the university dates from 1911, and it may be said that he owes his election to that post to the fact that he held (and still holds) his appointment at the Eye and Ear Infirmary, which provides him with the necessary material for teaching. Moreover, Mr. Harcourt holds some of his classes for the diploma in ophthalmic surgery (D.Ch.O.) in the laboratory of the Eye and Ear Infirmary.

The Election of an Assistant Surgeon in 1911.—Mr. Harcourt had many claims upon his colleagues, and his name was sent up by the Medical Board to the Infirmary Committee along with, and equally with, that of his only competitor. The committee were no doubt influenced in their selection by the fact that Mr. Harcourt's competitor had had considerable experience of operative ear work, and that he had qualified twenty years later than Mr. Harcourt. Nevertheless, as Mr. Harcourt wished to be officially associated with the clinical as well as with the pathological work of the infirmary, he was offered and accepted the post of assistant surgeon to out-patients. Both appointments were made on the same day.

Mr. Bickerton ends his letter with a quotation—"Publicity should not, and never need be, feared nor shunned by the well-educated and honourably minded practitioner." An excellent sentiment, but the use Mr. Bickerton makes of this quotation implies that the officers of the Eye and Ear Infirmary shun publicity. The staff submit their cases and specimens to discussion at the Medical Institution; the clinic is attended by students both post-graduate and undergraduate; the staff vacancies are always advertised in the medical journals; an annual report is published; the annual meeting is open to all, and is usually held in the Town Hall, and presided over by the Lord Mayor. Distinguished British and foreign specialists—and, may I add, Mr. Bickerton—are welcomed when they visit the infirmary, and we should welcome a visit from the *Daily Post*. What more in the way of publicity does Mr. Bickerton want?

Mr. Bickerton complains that "he adversely criticizes those who would fain hasten the fulfilment of his hopes." That is not so. My criticisms were levelled against the unfair and disparaging comparisons made between two hospitals. I yield to none in my admiration for the energy of the St. Paul's Committee and staff, but it must in fairness be remembered that ear work was never a prominent feature of their work, so that it was an easy matter for them to exclude it when they were building their new hospital. I also criticized the *Daily Post* for its omission to make an inquiry "into the amount, kind, and quality of the work done there (that is, at the Eye and Ear Infirmary), and into the future plans of its staff and committee" before publishing its article, and, finally, for the absurd medical grounds upon which it based its case for the separation of the specialities.

If I did not mention the leading article in the British Medical Journal, I certainly did not ignore the statement "That to associate the treatment of diseases of the ear with those of the eye" was "a combination which placed a serious impediment in the growth of either." On the contrary, a large part of my letter was devoted to showing that these studies were of mutual assistance to one another, and, if the practitioner had sufficient time and energy to devote to them, neither science suffered. If the quotation means that it is bad for a hospital surgeon to see eye and ear cases promiscuously at the same desk, as was the case thirty years ago when Mr. Stone and Mr. Bickerton were associated with the Eye and Ear Infirmary (and I quite understand the scientific otologist objecting to the system), then I most cordially agree; but thanks, in the first instance, to Mr. Richard Williams, the eye and ear out-patient departments were separated twenty-five years ago, and a few years later separate wards and operating theatre for ear patients were opened. When a surgeon has found that he had not the time or inclination to follow the rapid advances of otology he has given that branch up and handed his work over to another. In my opinion, if the progress of otology and rhinology has been impeded in Liverpool, that unfortunate result is due to the policy of the large general hospitals which have denied their special surgeons a fair share of beds, throwing upon general surgeons work which they usually did not want, and which they have not always thought it worth their while preparing for.

As to the statement:

> Mr. Jones's statement implying that the combination of the eye and ear is kept up because some of the staff, from love of the work, long training, and the character of their private practices, find it impossible to relinquish either of the two specialities seems tantamount to sacrificing the interests of the hospital to the exigencies of private practice.

We do not admit that the progress of either otology or ophthalmology, or the interests of the infirmary, have suffered on this account; and, as I have stated above, whenever a surgeon has felt that he had not the time or inclination to follow the rapid advance of otology he has given up the practice of that branch.

The charge of inconsistency does not trouble me. We have to deal with the situation as it exists and as practical, sane men. While I maintain that special departments in general hospitals or the association of different specialities in the same or adjoining buildings, as at New York and Boston, are advantageous to their own progress and to that of general medical science, and while I maintain that one man may work at two subjects with advantage to himself,

his patients, and his science,[1] I am quite prepared to admit that in the future it will be increasingly difficult to get the best of the young men to devote themselves to more than one subject, and for that reason I have for many years advocated the separation of the staffs while retaining both departments in the same building. There is such a thing, however, as over-specialization, and none of us who work in any speciality can afford to ignore the weighty words of Professor Harvey Cushing in his address on surgery at the International Medical Congress (BRITISH MEDICAL JOURNAL, August 9th, 1913, vol. ii, p. 290, etc.).

The committee of the Liverpool Eye and Ear Infirmary may be trusted to proceed with their plans, as funds become available, in their own time and in their own way, undeterred by the fear that the credit for their action may be claimed by others. So far as the writer is concerned this letter ends the correspondence.—I am, etc.,

Liverpool, Nov. 12th. HUGH E. JONES.

MOUNT VERNON HOSPITAL, HAMPSTEAD.

SIR,—In your issue of July 12th you published a letter signed by certain members of the honorary medical staff of this hospital, in which they resign their appointments as a protest "against the attitude which for the past few months the committee of management had adopted in reference to the medical board and its recommendations." This letter also appeared in the *Times* newspaper on July 10th, where it was replied to by me as chairman of the committee.

It appears that I should have replied to this letter in the BRITISH MEDICAL JOURNAL, but having dealt with it in the *Times* it seemed to me to be unnecessary to repeat myself. However, as certain statements have been made, and as the interests of the hospital are gravely prejudiced, by the issue of warning notices in your pages, and by the circulation of statements which are without foundation, it is necessary for me to ask you to allow me to refer to the matter in your columns. I am informed that the issue of the warning notice is based upon two assertions: First, that the two junior members of the honorary medical staff, Dr. F. W. Price and Dr. A. J. Whiting, had been dismissed from their appointments; and second, that in view of the expressed desire of the committee to place the beds at Northwood in the hands of the senior members of the staff, an injustice had been done to Dr. Tunnicliffe, the senior member of the honorary staff, who, it is said, was not offered beds at Northwood. It is therefore with these statements that I wish to deal.

With your permission I will repeat what I have said elsewhere as to the original statements contained in the letter of resignation. In the first place, it is untrue to say that any members of the staff were dismissed. This is proved by the simple fact that they resigned their positions more than two months after the alleged "dismissals," one of them meanwhile retaining his seat as a member of the committee. The duty of visiting patients at Northwood was allotted to them for one year, and that period had long expired. It must be remembered that the Mount Vernon Hospital consists of the two establishments at Hampstead and Northwood respectively, and the out-patient department at Fitzroy Square, and there was never any appointment to one of them exclusively. It is all one institution, and the by-laws provide that the allocation of the duties of the honorary medical staff rests entirely with the committee of management. The medical staff are represented by two of their number at the meetings of the General Committee as members of that committee, and one of them, Dr. Tunnicliffe, was present at the committee meeting on March 19th when I gave notice of motion in regard to the new appointments. It was on this date that Dr. Tunnicliffe, on hearing me give notice of the motion, asked to be excused from visiting Northwood, so, at his request, I withdrew his name. Dr. Tunnicliffe reported to the medical board on April 1st all that had transpired at the committee meeting. At the following meeting of the committee of management on April 16th I moved the appointment of the senior physicians, omitting Dr. Tunnicliffe's name, to the care of beds at Northwood, and the motion was carried unanimously. In regard to the statement of Dr. Tunnicliffe in the *Times*, that beds were not offered to him as senior acting physician, the facts are as I have stated. While it is true, therefore, that at the meeting of April 16th Dr. Tunnicliffe was not included in the list of physicians to whom beds were allotted, it is equally true that the omission was of his own seeking, because of his strongly expressed objection to undertake the duty. The whole of these circumstances are in the recollection of the members of the committee present on that occasion.

The other matter which demands attention is the statement that a request was made for a conference to discuss the new appointments and *other questions*.

No such demand was ever made. On May 6th the Medical Board demanded a conference to discuss the appointments which had already been made, but there never had been a request to discuss *any other question*. My committee, therefore, naturally declined to reopen a question which had been disposed of by them by a unanimous vote, and was wholly within their province.

In view of these facts, I have to require that the Warning Notice issued from week to week in the BRITISH MEDICAL JOURNAL be at once withdrawn, and that the officials of the Association be instructed that their recent practice of advising intending applicants to withdraw their applications, and occupants of the resident posts to surrender their appointments, is to cease forthwith.—I am, etc.,

C. JOHNSTON,
London, W., Nov. 19th. Chairman of the Committee.

*** The above letter was brought before the Standing Subcommittee of the Central Ethical Committee, and it decided not to discontinue the Warning Notice for the present.

THE IDEAL TUBERCULIN.

SIR,—The title of my letter of November 15th was taken from the leading article in your issue of November 8th. Even ruling out an attenuated living culture or an autogenous tuberculin for every patient as impracticable, I am far from regarding the polyvalent tuberculin formulated in my letter as the ideal of tuberculin-therapy.

Like all tuberculins, the preparations of the Farbwerke Höchst have certain disadvantages. Heat as high as 70° C. is used in the preparation of some of the exotoxic tuberculins, and we know little of the action of heat in altering the properties of the tuberculous toxin. It is known that in the preparation of typhoid vaccine a difference in the temperature from 45° C. to 50° C. will alter the final product. Again, the exotoxic tuberculins contain albumoses, peptones, and extractives, although the latest tuberculin A.F. (Albumose Frie) has followed on the lines of Béraneck's tuberculin in so far as it is grown on a peptone-free medium. On the other hand, I selected eleven representative varieties of Koch's preparations as "polyvalent tuberculin" in order to have the advantage of using the products of eighteen different strains of tubercle bacilli. One might have added a few more strains with Béraneck's tuberculin, A.F., or with the tuberculin of Gabrilowitsch, but as a clinical experiment in 1911 the above served my purpose, as the proportions in relation to strength were easily determined, and 1 c.cm. of the pure polyvalent tuberculin constituted the maximum dose.

From the standpoint of the ideal tuberculin, which constituted the subject of your article, eighteen strains of tubercle bacilli are totally insufficient. No two strains of tubercle bacilli are absolutely identical. Those who have followed the recent bacteriological work on tubercle bacilli as pathogenic to man can never regard these as falling into two cast-iron groups of human and bovine. From the easily grown human tubercle bacillus, which antiformin will isolate on Dorset's medium, to the hard growing bacillus, approximating to the bovine type and only isolated by animal inoculation, there are hundreds of strains differing in their cultural capacity alone, to say nothing of their chemical composition, of which we know so little. The ideal tuberculin will contain the exotoxins and the endotoxins of some hundreds of representative strains, with the least possible alteration in their chemical composition. Such a tuberculin is not impossible of achievement. Many bacteriologists have found a stock acne vaccine to be as serviceable as an autogenous vaccine, but

[1] The following are a few honoured names which occur to one off-hand of men who have done first-rate work in more than one subject: Hewetson, Teale, Secker Walker, Whitehead, Swanzy, Sandford, Bronner, Hutchinson, Tay, Hulme.

a stock acne vaccine may contain some fifty strains of the infecting organism. Again, a good streptococcal vaccine is prepared from a hundred different strains of streptococci. It is reasonable to suppose that the future of tuberculin will follow on the advance made in other branches of bacteriology. As, however, such a tuberculin had not yet been prepared, and as I had not the facilities for making it, it occurred to me that a stock polyvalent tuberculin, of the formula already given, would best meet the immediate needs of the case.

I am well aware that some workers have used different varieties of tuberculin in succession and not in combination, such as P.T.O., P.T., and T., possibly followed by some of the other varieties. This has been described as a " . . . method of progression from weaker to stronger preparations, for example, from P.T.O. to P.T. and thence to Old T. . . .", but I cannot see that it bears the slightest resemblance to the principle on which I have based polyvalent tuberculin, which is that the more a tuberculin corresponds, without absolute similarity, to the infecting tubercle bacillus, the more likely is immunity to that tuberculin to approximate an immunity to the disease.

There is much to be said against the method of giving tuberculins in succession. As one writer quite properly remarks about the different varieties of Koch's tuberculin:

> Experience has to show which of these various preparations are the better agents in stimulating living cell elements to produce the immunizing substances to which we must look for the beneficial results of specific treatment. Even did we know which were the most powerful immunizing agents, we have still to learn how to reach the highest degree of active immunization.[1]

This is an exact analogy with the streptococcal vaccine. We do not know which of the strains of streptococci will produce the immunizing response, and therefore we give a stock vaccine of many strains. The only other alternative to an autogenous culture, in the hope of finding the right strain of streptococci, would be to give the different strains not in combination but in succession, as some do in the case of tuberculin. With the vaccine and with tuberculin it might be argued that theoretically this was the more scientific plan, although bad practice in the interest of the patient. If the right immunizing strain be hit upon early, good and well, but most of us have seen failures with tuberculin in which the immunizing strain was not found, and there are few who cannot recall the patients in whom an immunity to tuberculin did not correspond to an immunity to tuberculosis. It is not a question of polypharmacy but of polyvalency, which is very different.

The only novelty in my method of polyvalent tuberculin is the application of the principles of bacteriology to tuberculin-therapy. No impartial or disinterested observer is satisfied with the present state of knowledge regarding tuberculin, a subject on which none can afford to dogmatize, not even the oldest, and it is only by careful observation and by clinical experiment that this knowledge can be extended.

In conclusion, I have had proof from many quarters that the interest of the profession in the treatment of tuberculosis is sufficient to ensure a trial of polyvalent tuberculin, and may possibly lead to the evolution of what after all is our common goal—the ideal tuberculin.—I am, etc.,

London, W., Nov. 21st. HALLIDAY SUTHERLAND.

[1] Wilkinson, Camac W.: *Tuberculin in the Diagnosis and Treatment of Tuberculosis*, 1912, p. 423.

ON DOSAGE IN THE NEW "PHARMACOPOEIA."

SIR,—I am indebted to Sir Lauder Brunton for his support of my contention that, owing to the prescriber's limited knowledge of doses, patients are not in all cases getting the drug best suited to them; and to Dr. Brewer for pointing out to what an absurdly limited extent the doctor avails himself of the many remedies contained in the *Pharmacopoeia*. I have also received a large number of letters, and in a few cases the writers raise difficulties. As many of your readers may share their objections, I will endeavour to answer them here.

Some deplore the introduction of the new words compounded with "per" and "sub" and are confident that we shall never get used to them. They admit that their exact counterparts exist in "perturbatio" and "subsultus," and that they are therefore not unworthy to enter the *Pharmacopoeia*, but they say we have too many new words already. Well, as for their strangeness, we have long admitted to full citizenship "perchloride" and "subacid," and those I have suggested are not one whit less assimilable. The history of many words in current use may be cited to allay their fears. What word is more familiar than "its"? Yet it occurs neither in the Bible nor in Bacon, and Shakespeare uses it only about ten times; while, of words which were unknown before the nineteenth century, there are myth, artistic, reliable, sanitary, sewage, cereal, and utilize. The alternatives commonly suggested are either to revive such words as elixir or essence, which have dropped out of the present *Pharmacopoeia*, or to use a qualifying adjective, such as *fortis*, *medius* and *mitis*, to represent the three strengths. The first suggestion is not practicable, for it is impossible to get uniform doses unless we have at least three forms of tincture, etc., or about twenty new words in all, while the idea suggested would give us at most five additional words. Moreover, the essences and elixirs are still largely prescribed, and are associated each with a definite dose, which in some cases would have to be unlearnt. As for the use of an adjective, it is probable that it would often be omitted; moreover, a qualifying adjective is better limited, as at present, to different degrees of strength in the same preparations, like liq. ammon. and liq. ammon. fort. I abandoned this idea because it seemed distinctly inferior to my later one of dividing a group such as the tinctures into three by using "pertincture," for all tinctures with a dose of 5 to 15 minims; "tincture" for those with a dose of ½ to 1 drachm; and "subtincture" for those whose dose is 2 to 4 drachms, and bringing divergents into line with these three standard doses. Surely one word is better than two if its meaning is equally clear.

But all such fanciful or aesthetic objections as these are but as dust in the balance compared with the enormous boon to the prescriber of knowing that each group-name has always the same dose. We should be sometimes in an awkward position but for the chemist's query as to the dose meant, and instead of being ruffled we should be grateful to him. But it must be remembered that if the chemist is too busy to look up the point, even he may pass a dangerous dose; and, without his books, he may know as little about doses as the doctor. I have been assured that before the Insurance Act came into force there were numbers of chemists who dispensed on an average only one prescription a week! It is therefore often a case of the blind leading the blind, but with this difference, that not they only, but the public fall into the ditch.

The fact is that it is the public who suffer the most under the present chaotic distribution of doses. It is they who pay with their health or their lives for the prescriber's limited or wrongful use of drugs. Although, therefore, the compilation of the *Pharmacopoeia* is entrusted to the General Medical Council it is a Government publication, and as such the rights and interests of the general population must be paramount.—I am, etc.,

London, S.W., Nov. 3rd. RALPH W. LEFTWICH, M.D.

DIAGNOSIS OF SYPHILIS.

SIR,—The Public Health Committee of the Chelsea Borough Council has made arrangements with the Lister Institute of Preventive Medicine for the carrying out of the Wassermann blood reaction free of charge for medical practitioners attending the poorer class of patients residing in Chelsea.

Outfits can be obtained at the Lister Institute, and samples of blood may be sent either to establish a diagnosis in suspected cases, or during the treatment of cases to ascertain the efficacy of treatment. The name and address of the person from whom the blood is taken must be included in the particulars required of the case for the information of the medical officer of health as to the status of the patient, and his being a resident in the borough. Such information will be treated in the strictest confidence, and no use whatever will be made of it to the detriment of the patient.

It does not seem feasible at the present time to arrange

for the microscopical examination (dark-ground illumination method) of discharge or material from chancrous sores, as it would seem desirable that such material should be taken direct from the patient by the expert who makes the microscopical examination, owing to possible errors in collecting material by unskilled persons, and the effects of drying or other changes upon such material in transit to a laboratory for examination. Negative results in the determination of spirochaetes under such circumstances might give rise to unfortunate conclusions. No doubt this is a matter which will receive early consideration by the Royal Commission now sitting.—I am, etc.,

Louis C. Parkes, M.D., D.P.H.,
Medical Officer of Health, Metropolitan Borough of Chelsea.

November 22nd

THE ROYAL COMMISSION ON VENEREAL DISEASES.

Sir,—Would Colonel Myers add to the interest of the case quoted, where he abstained from informing "a very respectable married couple" that their baby had undoubted syphilis, what steps were taken to ensure: (1) That the unfortunate victim received adequate treatment; (2) that the wickedness of producing other children similarly handicapped was impressed on the "respectable" but erstwhile ignorant parents; (3) that the "respectable" parents were prevented as far as possible from developing the results of untreated syphilis?

Patients have so little realization of the necessity of continuous treatment when the symptoms are comparatively painless that it would be instructive to learn how he accomplished what was manifestly his duty to the parents, their child, and the State, of which he is a defender. It is impossible to credit that any sentimental reason would justify silence causing serious risk of any of these points being ignored. Arguing even on emotional grounds, what parent, worthy of the name, would not prefer to know that his or her partner had sinned in the past rather than hazard the results of neglected disease of this kind to the child and probably to its future brothers and sisters?—I am, etc.

November 16th. "Pro Bono Publico."

THE CAUSE OF RHEUMATOID ARTHRITIS.

Sir,—Dr. Garry expresses the opinion that my theory that rheumatoid arthritis is due to deficient action of the sweat glands is as untenable as attributing phthisis to increased action of the sweat glands. Every thinking man knows that the sweating of phthisis is an effort of Nature to remove the excessive products of destructive metabolism which occurs in advanced cases of that disease.

Dr. Garry ridicules defective sweating as a cause of rheumatoid arthritis, and then at once proceeds to advocate treatment by hot mud baths at Postyen, really one of the most effective methods of restoring and increasing action of the sweat glands, and states that a local museum of old crutches attests the success of the treatment.

There used to be an old way of treating the disease in a certain Yorkshire valley by covering the patient with hot cowdung, which also produced perspiration and relief.

If the mud and the cowdung bath had been used *cold* with success, then, indeed, one might be justified in stating that the cure was due to some mysterious radio-active or other emanation, and not to sweating. Why should we advise our patients to lie in a filthy cowdung or mud bath when we can obtain the same effect in a clean way by a hot air or vapour bath, which can be used whenever necessary over long periods at home, instead of sending them for a short period at great expense and business inconvenience to some place abroad?

I have quite recently seen a patient whose shoulder and hip were so fixed by pain that he could hardly walk across a room, and who, after two or three hot-air baths (a sixpenny gas-burner and a cane-seated chair were the apparatus used), was able to walk twenty miles before lunch, without undue fatigue, in spite of his fifty years. Rheumatoid arthritis occurs in people who are bad sweaters, it is aggravated by chills or anything else which checks sweating, and is relieved by any means which increases sweating, such as heat, warm climate, or alkaline medicines, and it is just as logical to say it is due to sweat block as it is to say that jaundice is due to bile block, or uraemia is due to urinary block; indeed, blocked sweat glands cause death more quickly even than kidney block, as proved by the cases quoted in my previous letter.

The fact of the matter is this: that unless the blood is kept at a certain blend by the normal action of the various secreting and excreting glands, there is bound to be trouble. To the immortal advice to "purge, forswear sack, and live cleanly" one might add, "and sweat freely."—I am, etc.,

Sunderland, Nov. 1st. Thomas A. Watson.

YEAST INFECTION IN CHILDREN.

Sir,—In my short communication I did not intend to say anything to offend Mr. Foulerton. If my paper was not so elaborate as to overwhelm him with its copiousness, this was because I did not take myself or thrush too seriously. I shall try to bolster up my irresponsible statements.

1. Vuillemin referred the thrush fungus to endomyces in 1893. That his work was not satisfactorily confirmed may be gathered from Guilliermond.[1] With its foreword by Dr. Roux this little book from the Pasteur Institute may be taken as authoritative. I have briefly discussed the nature of the thrush fungus,[2] and given some reasons for not accepting unreservedly Vuillemin's view. I have other reasons.

2. Our controversy has nothing to do with San Felice's *Sac. neoformans*, and it is unnecessary to scare me with the ghost of a buried mycology. Guilliermond[3] does not regard it as a saccharomyces—who does?

3. In 1911, working at a yeast infection apparently starting at the tonsil, I applied to Mr. Goadby for information about his pathogenic mouth yeasts.[4] He kindly gave me a culture marked *Sac. neoformans*. As I failed to get endospores by the usual methods, it was permissible to regard it as possibly a torula and not a saccharomyces. This proved true, and I got it in mycelial form as a monilia. Now the best-known monilia in the mouth is the thrush fungus. As descriptions vary so much, I isolated this organism from typical cases, and growing these side by side with Mr. Goadby's organism repeatedly soon satisfied myself as to their identity.

4. Meanwhile it occurred to me that as Mr. Foulerton had not found endospores in *S. tumefaciens albus* (which interested me as having been found in sore throat), it was possible that he, too, had been working with a yeast-conidial form. At all events the source of these two pathogenic organisms was the same—the mouth—in which torulas are much more frequent than saccharomycetes.[5] In the mouth may be found many fungi, but of the budding fungi need be considered only saccharomycetes, monilias, and torulas (yeast-conidial forms of unknown position). Mr. Foulerton is aware[6] that the thrush fungus may be subcultured indefinitely in yeast form on some alkaline media. Mr. Goadby had it in this form on glucose agar. My own experience has taught me that this sometimes holds good for wort agar also. It follows, therefore, that among torulas from the mouth one must be prepared to meet with the thrush fungus masquerading in conidial form as a yeast. Hence the importance of determining whether one is dealing with a sporing yeast (saccharomyces) or a non-sporing yeast (torula). It is obvious also that in dealing with such slippery and evasive organisms it is important to have some constant to which to pin them down. For this reason monilias have been overhauled by the saccharomycologists, and the collaboration of workers like Paul Lindner and Emil Fischer has given us a carefully devised scheme of sugar gymnastics which safeguards results, provided always we do not put an organism of which we know little into a sugar of which we know less.

S. tumefaciens albus fermented maltose but not lactose. The absence of information as to saccharose is to be regretted. If it was not fermented the inference is clear. The maltose non-saccharose fermenters are so rare among saccharomycetes that Klocker can only give two, and one

[1] *Les levures* (1912), p. 497.
[2] *Lancet*, July 5th, 1913, p. 44.
[3] Op. cit., p. 485.
[4] *Lancet*, December 25th, 1909, p. 1877.
[5] British Medical Journal, October 12th, 1912, p. 972.
[6] *Trans. Path. Soc.*, 1901, p. 270.

of these is from Japan.[7] In old books on fermentation only one was given, the notorious *S. albicans*[8] which has been known since 1890 as *Monilia albicans*. Bearing in mind its source we should not err far if in this case we regarded *S. tumefaciens albus* as the same organism. This sugar behaviour alone enables one to distinguish the torula form of *M. albicans* in any organism from the mouth.

If saccharose was fermented undoubtedly saccharomycetes must be reckoned with. Mr. Foulerton declares that mycelial forms did not ever occur on any medium; as he used potato I must point out that this is an excellent medium for inducing sporulation in saccharomyces. In his careful search for mycelial forms on this medium, he could scarcely have failed to find endospores if present. Though there is no evidence that he sought for them eagerly, he must not on this account expect his organism to be accepted unreservedly as a saccharomyces. The fact that he did not find them in an organism with which he worked for months is strong presumptive evidence against a saccharomyces. The small size, the vacuoles even in young cells with their prominent metachromatic corpuscles, and the photomicrograph are strong corroborative evidence in favour of a torula. Now torulas that ferment maltose are uncommon in Nature but common in the mouth, and I have always found the latter to turn out monilias. When these ferment saccharose Fehling's solution does not show reduction in the fermenting fluid as it ought in presence of active saccharomyces invertase; in short, one finds monilial invertase is present. This, along with the fact that raffinose is not fermented even incompletely and dextrin is, enables one to spot the "candida" group of monilias among mouth torulas. The non-fermentation of galactose by both groups is also worth noting, but of less importance.

In six cases of thrush I found *M. albicans* five times and *M. candida* once, and they are not uncommon in the mouths of adults. The casual guests in the mouth are probably the same to-day as in 1899. One frequently meets one agreeing in every respect with his description, but understanding better to-day how these acquire several aliases, one is more searching in the examination of their passports.—I am, etc.,

Ealing, W., Nov. 23rd. ROBERT CRAIK.

THE SCHOOL MEDICAL SERVICE.

SIR,—There has been a feeling of discontent for some time past among the majority of those actually engaged in the work of medical inspection of school children. In the greater number of areas an undue proportion of the work of these officers consists of the routine inspection of a large number of children, a considerable proportion of whom present no features of especial interest to a medical man.

The salary offered for the work is usually inadequate; the initial salary is in most cases too low; rarely is the increased value of the services of the officer acknowledged by an adequate increase in his or her salary. In a few areas, including Bradford and Brighton, this state of affairs either has not existed or has already been altered; arrangements have been made so that the medical officers actually inspecting the children are only required to inspect a more or less reasonable number of children in the year; the rest of their time being taken up in treatment of the defective children, etc. The grievance of inadequate salary is remedied to a certain extent in both these areas.

The feeling also exists that a result of the increased activity in the public health world in the last few years has been the creation of a large number of subordinate officials for whom there is but little outlook.

In order to improve the status of the officers engaged in the school medical service an organization has been formed within the Society of Medical Officers of Health. The advantages of this course over those of forming a separate association for the purpose are that the society can offer the benefits of many years of experience of organization; it has funds at its disposal and a journal; in addition many of those engaged in the school medical service are already members of this society. All those engaged in the service of education committees, either in an administrative capacity or as medical inspectors of school children, are eligible for membership of this group if members of the Society of Medical Officers of Health; membership of this society is open to the same class of the medical profession, including ladies, who are especially welcome.

The improvement of the status of the school medical service is a matter requiring careful handling by experienced persons. Prominent members of the Society of Medical Officers of Health have already afforded valuable service to the movement; Dr. Herbert Jones, one of the secretaries of the society, undertook the duties of chairman at the initiatory meeting; Dr. Alfred Greenwood, County Medical Officer of Health and School Medical Officer for Kent, presided at the first meeting of the group. In order to avoid the unnecessary inconvenience and expense involved by attending meetings in London it is desirable that groups of officers engaged in the school medical service should be formed in the branches of the Society of Medical Officers of Health.. The arrangements for these groups would, of course, be made by the local members. The opinion, however, has been expressed by several of those who will become members of such groups in the branches that it would be desirable to hold the meetings on the same day as the ordinary meetings of the branch, so as to avoid multiplicity of journeys. In order to link up the groups in the branches with the central group it has been arranged that the Executive Committee shall include, in addition to the chairman, secretary, and treasurer, a representative elected by each of the groups formed in the branches.

The suggestion has been made that the groups might with advantage adopt as an item of their policy the following extract from the criticism of the Board of Education on the school medical service in London. The Board suggested that:

> Each assistant medical officer should be entrusted with other kinds of work—for example, the further examination of visual defects, public health work, including investigations of infectious diseases in schools, the medical inspection of children in secondary schools, scholarship candidates, etc., work in connexion with the special schools, research and laboratory work, and some share in the working of the administration arrangements. The work of treating minor ailments arises naturally out of the work of the inspection centre, and could most effectually be carried out in intimate conjunction with the work of the inspection centre by the officers responsible for that work.

The movement is not necessarily in favour of a school medical service independent of the Public Health Service or a school medical service *ad hoc*; certain of the members of the group have expressed themselves strongly as to the necessity of making all assistant school medical officers not only nominally but actually assistant medical officers of health.

It is hoped that as many as possible of those eligible for membership of the group will attend the next meeting, to be held on Saturday, December 6th, at 2 o'clock, at 1, Upper Montague Street, Russell Square, London, W.C.—I am, etc.,

C. W. HUTT, M.A., M.D.Cantab., D.P.H.Oxon.,
Senior School Doctor, Brighton; late Assistant Medical Officer of Health, Brighton.

Brighton, Nov. 14th.

CORRECTIONS.

SIR,—As the abstracts of reports of the proceedings of the British Oto-Laryngological Society printed in the BRITISH MEDICAL JOURNAL of the 30th August last (p. 552) and of the 22nd instant (p. 1384) in connexion with an important contribution of mine to otology, I note that my proper full name was omitted in the former, and certain assertions are attributed to me in the latter that were never made by me. These are, in fact, made to appear false to inquiring readers, by what appears to be a misconstruction of the text of the report that was made to you in common with other editors of the medical press. I write to submit these to your consideration, and to invite you to make thereafter in the next issue of the JOURNAL the corrections which I am sure you will not fail to appreciate as due to me. (1) On page 522, referred to above, my name is once mentioned and without my initials—thus, "Dr. McCulloch." As I am not the only person of this name in the medical pro-

[7] Lafar, *Techn. Mycology*, vol. iii, pt. 2 (1910) p. 282.
[8] *Principles and Practice of Brewing*, Sykes and Ling, p. 390.

fession of this country, this omission effectually obliterates my identity. (2) The description of the degree of labyrinthine deafness in those four cases, as independently otologically tested, was "extreme." This qualifying word was omitted. (3) On page 1384 of the issue of the 22nd instant there occurs the statement:

> Dr. H. D. McCulloch, in a paper on the therapeutics of radio-active agencies in disease, with special reference to the cure of chronic nerve deafness and deaf-mutism, stated that since the date of his original statements on this subject a good deal of corroborative evidence had accumulated abroad.

No such statement was made by me, as this is not true. If you will take the trouble of referring to the report that was sent to you, you will find that I made no such statement with regard to the therapeutics of radio-active agencies in the cure of chronic nerve deafness. Indeed, there have been only two corroborations of this particular original work of mine abroad, as far as I am aware—namely, the one case reported by an aural surgeon at Boston, U.S.A., in August last year, and those cases reported on page 558 of the *Medizinische Klinik* of Berlin in its issue of April 6th last by Dr. Hugel. But the particular connexion in which I cited the experience of others abroad was distinctly stated in the report which you received in common with other editors. It was in the following terms:

> Dr. McCulloch incidentally drew attention to the important immunizing effect in subacute infectious processes, referring to his previous contributions on that subject, and to the amount of corroborative evidence that had since accumulated abroad.

You will find this item correctly reported as such in the *Lancet* of the 15th instant on page 1396.

(4) You omitted to mention the establishment of my priority in this field of otology, or the fact of the circulation of my paper previous to the meeting. (5) You omitted to mention some of the favourable comments that were made and the names of those others who took part in this discussion, while you mention every word of such unfavourable criticism as happened to be offered, without even inserting the fact that "Dr. McCulloch replied."

As such reports are calculated seriously to damage my professional reputation in the minds of my medical friends, as well as to frustrate the object of my long researches for the benefit of humanity at large, I shall be obliged to take serious action in the matter (and on this occasion not in the constitutional manner, to which I have hitherto confined myself) unless you comply with this reasonable request for correction, giving such correction a prominence at least equal to the misconstructions of which I complain.—I am, etc.,

London, W., Nov. 26th. H. D. McCulloch.

LONDON MEDICO-PSYCHOLOGICAL CLINIC.

Sir,—Will you kindly allow me to state in your columns that I am no longer on the Committee of the Psycho-Medical Clinic?—I am, etc.,

London, W., Nov. 26th. Constance E. Long.

Sir,—As my name has been given as a supporter of a proposed psycho-medical clinic I shall be obliged if you will allow me to say that I gave my support under a misapprehension of the institution's aims and constitution.

I have withdrawn from association with it, and I should only support a movement conducted on strictly professional lines.—I am, etc.,

London, W., Nov. 22nd. Chas. Lloyd Tuckey, M.D.

At the festival dinner of the Great Northern Central Hospital on November 20th, Sir Felix Schuster, who was in the chair, said that the hospital was the only general hospital in Islington, which, with its 350,000 inhabitants, was the largest borough in London. The available accommodation during the last concluded year was 185 beds, and in these 2,517 persons received in-patient treatment. The nursing staff was at present very badly housed, and if new accommodation could be provided for them at a cost of £12,000 it would be possible to receive more patients. The accumulated maintenance debt of the hospital was approximately £10,000, but during the course of the evening donations to the amount of £7,488 were announced.

The Services.

DUBLIN UNIVERSITY VOLUNTARY AID DETACHMENT.

Last week the Dublin University Voluntary Aid Detachment held its first annual meeting in Trinity College. The report stated that in March, 1911, the idea originated of starting a Voluntary Aid Detachment of women students and graduates of Dublin University, the prime movers being Dr. A. T. Dixon, professor of anatomy, Dublin University, and Dr. Lily Baker, demonstrator in anatomy to the women medical students. The preliminary course of lectures were given by Dr. Lily Baker, and those on nursing by Dr. Ella Webb. The detachment was registered under the Territorial Branch of the St. John Ambulance Association in June, 1912, and thus became a nursing unit of the Territorial Force. In the event of war or national emergency the members agree to serve as army nurses in their own country. The latest addition to the means of training has been the opening to the corps of the Drumcondra Hospital, the members each being allowed to put in one week in the wards under the direction of the nurses. During the last two summers the corps has gone into camp in the country, and has been provided with a certain amount of hospital equipment by the St. John Ambulance Association. This year flag-signalling has been added to the general course of ambulance instruction. The Provost, Dr. Traill, distributed the prizes and medallions won during the year.

Universities and Colleges.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Annual Meeting of Fellows and Members.

Mr. G. B. Makins, C.B., Vice-President of the College, presided at the annual meeting of Fellows and Members on November 20th at 3 p.m.

Chairman's Introductory Remarks.

Mr. Makins first expressed the regret of the Council that the President, Sir Rickman Godlee, had been prevented from attending the annual meeting. He referred to the important part which he had been called upon to take in the inauguration ceremony of the American College of Surgeons. In presenting the report he briefly referred to certain paragraphs. In regard to the Insurance Act he informed the meeting that since August 1st a watching committee of the Joint Committee had been appointed. The object of this committee was to collect information in regard to the working of the Act, and to advise when any event rendered action desirable.[1] After referring to the paragraphs dealing with the title of "Doctor" and with the report of Mr. Golding-Bird on the work of the Central Midwives Board, he called attention to the statement of expenditure of the College on the Queen Square estate. This statement showed that the amount received by the College from the sale of the old examination hall was roughly £2,600 less than the amount expended on the new building; all of this, save £500, had now been paid. As a set-off it was to be remembered, first, that the College had a freehold hall which was built in such a manner as to give complete satisfaction to all concerned; and, secondly, that the working expenses had been reduced by £1,000 a year as far as the College of Surgeons was concerned. The number of Fellows and Members received into the College, as well as the number of licences in dental surgery and diplomas in public health and tropical medicine, was approximately the same as in previous years; this Mr. Makins ventured to consider satisfactory. Lastly, he spoke briefly on the statement of income and expenditure.

Questions.

Dr. Sidney C. Lawrence, the Honorary Secretary of the Society of Members, asked a number of questions, to which Mr. Makins replied. Among these was one dealing with the courtesy title of "Dr." Dr. Lawrence inquired why the courtesy title was not given on the agenda paper to Mr. Brindley James. He considered that as an act of courtesy the Council should do this without being asked. The Chairman stated that if Mr. James had intimated a desire to be called "Dr.," the Council would have placed this title before his name on the paper. Dr. Lawrence further asked who was bearing the expenses of the President on his visit to America. The reply was that the President himself was probably paying all his expenses; the College was not doing so.

Sir Victor Horsley pressed for a reply to his question regarding the interview at the Home Office on the subject

[1] British Medical Journal, November 15th, 1913, p. 1336.

of the scarcity of bodies for dissection and other teaching purposes. It appeared from the reply that the Home Office did not suggest introducing legislation, and Sir VICTOR HORSLEY insisted that this meant that nothing would come of the action taken.

Dr. NELSON HARDY suggested that the Council should consider the advisability of co-opting Members or Fellows in general practice on to the Insurance Joint Committee. Mr. MAKINS resisted the proposal, as he considered that the Committee would be more valuable with its present constitution. The suggestion would, however, be considered in Council. Dr. MORTON also asked some questions, as did Dr. COLLINGWOOD and Dr. OLDFIELD.

Direct Representation.

Dr. J. BRINDLEY JAMES moved the following resolution:

> That this twenty-ninth annual meeting of Fellows and Members again affirms the desirability of admitting Members to direct representation on the Council of the College, which, as now constituted, only represents those Members who also hold the Fellowship; and that it does so in order that the constitution of the Council of the Royal College of Surgeons of England shall be in keeping with modern ideas of true representation.

He contended that this resolution, which had already been passed without opposition twenty-eight times, had received wide support from the Fellows of the College as well as from the Members. The late Sir Jonathan Hutchinson had expressed himself to the effect that the Members had a moral right to be represented on the College. He maintained that the conduct of the affairs of the College would be beneficially affected by the admission of a few Members. At present the exclusive election of operating or hospital surgeons was disadvantageous to the profession, for they did not take a sufficiently wide survey of the matters of importance. There would be no damage to the privilege of the Fellowship by the admission of suitable Members. Members were at present eligible to hold office as examiners, professors, and prizemen; why not also to serve on the Council?

Dr. SIDNEY LAWRENCE, who seconded, regretted the retirement of Dr. Joseph Smith, who had led the Society of Members for so many years. Owing to advancing years he had been forced to step down, but still continued to give his moral support to their scheme. He maintained that the Society of Members had been of the greatest possible use to the College. After stating that some of the Members of the Council thought it extremely stupid and foolish for the Council to maintain a position of obstinacy, and that they did not even represent the majority of the enlightened Fellows, the speaker referred to the result of the interview with the Government in 1907 on this subject. He expressed the opinion that the reason why the Council had not told the Members the result of that interview was that the Government's reply was favourable to the Members. He then dealt with the official reply to the resolution passed last year. He applauded the courage of Sir Alfred Pearce Gould for having attempted to give a reply at the meeting, but condemned Sir Rickman Godlee for his silence. The reply of the Council this year was a reference to a report issued in 1907, which report was inaccurate where it was not insolent. The courses it was open for the Members to take if the Council persisted in its present attitude were many. They could influence students not to take the diploma of the Conjoint Board, but to go to some provincial university and get a degree. Sooner or later the Society of Members would adopt a more active policy. He expressed the hope that the Council would be sensible enough to see that it was in the highest interests of the College to accept the resolution.

Dr. VINCENT BELL supported the resolution, but at the same time dissociated himself from what had been said by the proposer and seconder. He advocated acceptance of the resolution as a means of removing the attacks which the Society of Members made on the Council year by year, and he also considered that in many instances Members were only prevented from obtaining the Fellowship of the College by financial reasons.

Dr. COLLINGWOOD contended that in the twentieth century there could be no question as to the right of members of a corporation having a say in its government. The time was past when the legal right obtained by charter or Act of Parliament of autocratic government of any society could be upheld. It had become absurd. The Members had not used force in any form in their endeavour to obtain their rights, and the Council had therefore relied on apathy in their resistance.

Sir VICTOR HORSLEY moved the adjournment of the debate. He did so for two reasons of first importance. The first was the constitutional question. Last year Sir Rickman Godlee had maintained silence when invited by him to give the reasons why the Council refused the Members their elementary rights. In his closing speech, he (Sir Victor Horsley) had pointed out that Sir Rickman Godlee, as President of the College, would have the opportunity of replying this year. He regarded the fact that Sir Rickman Godlee had made a statement at the Apothecaries' Hall shortly after last year's annual meeting as a breach of courtesy. He claimed that the meeting had a right to a definite reply. Until they knew the reasons for the refusal, it was not possible to go to the Privy Council for intervention. That reply must be given by the President, and for this reason it was essential that the debate should be adjourned until he had returned from America. The second reason was that a disciplinary point had arisen in the conduct of the President in the hearing of penal cases, which had resulted in the removal of two Members from the list.

The VICE-PRESIDENT stated that he was unable to accept the motion, but on being pressed, allowed Dr. George Jones to second the motion, before finally deciding the point. Dr. GEORGE JONES urged that the President only could speak as the mouthpiece of the Council. But apart from this very strong reason for the adjournment, the second reason was still more powerful. Sir Victor Horsley had in polite terms practically suggested a vote of censure on the President, and since Sir Victor Horsley would not attack a man save to his face, it was necessary to give the President an opportunity of defending himself on a personal charge. On the point of procedure, he urged that every society and meeting could, if they desired, adjourn a debate.

Mr. MAKINS refused the motion. Dr. OLDFIELD said that according to the Charter of the College the Members had no powers or rights whatsoever, since the Chairman could terminate a meeting or stop a Member from speaking.

The CHAIRMAN declined to allow Dr. Oldfield to proceed on this point, and Dr. OLDFIELD then spoke to the original motion. He asked the Council what it was doing for the Members. They wanted comfort, help, and advice. The Members, by the provisions of the Charter, were quite impotent. They looked to the Council for their rights, but always got the same answer. They would get it again this year. On referring to the reply published, he found that in the year 1907 the Council had conceived and brought forth a child, of which it appeared to be very proud, for it always referred to this child-reply since. (Sir VICTOR HORSLEY interjected that the child was mentally defective.) But the Council had been sterile since that year. The Council appeared to think that when the annual meeting amended the resolution referring to the action of the Council on the insurance question, the meeting had approved of this action. In reality it had been sarcastic, and only approved of the action "so far as it goes." The reference in the report to this was an insult to the Members. In their reference to the representation question the Council had not met the Members at all. He suggested one of two methods. The Council could either select a suitable Member each year, and by making him an Honorary Fellow take him into the Council, or it could apply for a supplementary Charter.

Dr. F. G. LARKIN suggested that the attitude of the Members might be prompted by some jealousy.

Dr. GEORGE JONES indignantly repudiated this suggestion, and added that it was ridiculous to bring forward reasons for or against this resolution; it merely sought to uphold the principle of representative government, which had long since been accepted as the only reasonable form of constitution. His concluding remarks included a survey of parliamentary and other forms of central as well as local government of the present day.

The resolution was put to the meeting and carrried *nemine contradicente*.

Financial Resolutions.

Dr. A. S. MORTON moved:

> That this meeting of Fellows and Members requests the Council to include in their next annual report a balance sheet, showing fully and without reserve the assets and liabilities of the College on Midsummer Day, 1913.

He began by criticizing the items in the income and expenditure account published in the annual report, and was requested by the CHAIRMAN to address himself to the question of a balance sheet. Continuing, he criticized the expenditure of the Council in certain instances. He particularly pointed out that the items dealing with the printing and production of the *Calendar* and *Catalogues*

were large, while a very small sum resulted from the sale of these publications.

Dr. OLDFIELD seconded the motion, and at the same time, with the permission of the Chairman, covered those points dealt with in the following motion, in order that when the time came he could merely move it without speaking again. He made a special point of the fact that the expenditure on the examinations for the Membership was low as compared with the large revenue from this examination, while in the case of the Fellowship the income was only a little in excess of the expenditure. He asked questions in regard to the various items of expenditure, and then turned his attention to the assets of the College. He made various suggestions as to the best means of spending the balance. The motion was put and carried, 12 voting for and none against.

Dr. OLDFIELD then formally moved:

> That this annual meeting of the Royal College of Surgeons places on record that it is not satisfied with the administration of the College finances as carried out by the Council, and resolves that such steps as are within its power to take, if any, shall be taken by this annual meeting to remedy the same, and that, if it has no power, steps be taken to secure for it the necessary authority.

Dr. LAWRENCE seconded in a short speech. He objected to the expenditure on the dinner, and Sir VICTOR HORSLEY expressed the opinion that it was absurd to make out that the dignity of the Council would be enhanced by the holding of an annual dinner. The moneys expended would be very properly given to the British Medical Benevolent Fund, in aid of some of the many distressing cases which were dealt with by that Fund.

The CHAIRMAN replied to the criticisms raised in the two discussions. In regard to the *Catalogues* and *Calendar*, it was obvious that the cost must be high, and that the sale must be extremely limited. The value of the publications, and indeed their necessity, could scarcely be challenged. The other points were dealt with severally.

The resolution was carried by 10 to 0.

Count-out.

Dr. W. G. DICKINSON was then called upon to move a further resolution, when he pointed out that there was not a quorum of Members and Fellows in the theatre. This having been confirmed by a count being taken, the meeting terminated automatically.

THE "CALENDAR" OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE *Calendar* of the Royal College of Surgeons of England for 1913 includes the usual list of officers, professors, lecturers, examiners, Members and Fellows, with charters, by-laws, and the annual report of the Conservator of the Museum. One rather conspicuous feature is the list of fifteen new Honorary Fellows elected last July. Of the Honorary Fellows elected only thirteen years ago, no fewer than sixteen are dead, including the late King. His present Majesty was elected in 1909, when Prince of Wales. There are now 1,589 Fellows on the ordinary list. Of these 1,556 obtained the diploma by examination, 27 were elected as Members of twenty years' standing, 4 elected otherwise, 1 (Eleanor Davies-Colley) Fellow by examination under the Medical Act of 1876, and 1 (Arthur E. J. Barker) elected *ad eundem*. In the Chronological Register of Fellows, the familiar names of Barwell and Bryant head the list, under the date 1853. The total number of Members amounts to 17,126, and there are still 287 who hold the long-suppressed diploma of Licentiate in Midwifery. The Licentiates in Dental Surgery number 2,559, the Diplomates in Public Health 786, and the Diplomates in Tropical Medicine and Hygiene, holding the diploma granted conjointly with the College of Physicians, number 13. The change from the Embankment to the new Examination Hall in Queen Square has proved financially advantageous, but large as the balance of income over expenditure has been, it has not been large enough to cover the depreciation during the year of the securities held by the College, amounting, as this does, to £8,874. All the expenses incurred by the building of the new Examination Hall have been paid, excepting a sum of £500 still due to the builders. The Librarian, Mr. Victor Plarr, reports that during the past year the library was open on 275 days, and that the number of readers was 8,380, an average of 30 a day, a slight decrease, due, the Librarian believes, to the fact that visitors to the library often neglect to sign their names in the book kept in the hall of the College for the purpose.

THE ADMINISTRATION OF THE ROYAL COLLEGE OF SURGEONS.

DR. JOSIAH OLDFIELD (London, E.C.) writes:

It must be a matter of deep interest to every reader of your JOURNAL to know that at the annual meeting of Fellows and Members of the Royal College of Surgeons there was not a single Fellow or Member to be found there to support the conduct of the College by the Council. It is pathetic in the extreme to find distinguished surgeons of worldwide eminence so blind to the spirit of the age as to find themselves at an annual meeting without a single friend or supporter.

It is quite evident that the matter cannot stay where it is. Twelve members of the Council were present, and not one of them was able to say a single word in support of their persistently obstructive attitude against the wider and wiser administration of the College. Upon the face of it their administration must stand condemned, since not a single Fellow or Member of over 10,000 of which the corporation consists could be found to come and support the Council in the face of resolutions which condemned their attitude.

In these days it is impossible for a few highly placed officials to combat the unanimous demand of thousands of their fellow-members of the corporation, and since for nearly twenty years the Council of the College have definitely refused to take any steps for giving Members full voting power, or a seat on the Council, the only alternative is for the unanimous body of Members to petition for an alteration of the Charter.

I venture to suggest that there would be two simple ways which would to some extent meet the needs of the case—namely, the power of the Council under its present charter to elect two Members to the F.R.C.S. annually without examination; therefore, if the Members themselves selected one of themselves, and the Council honoured their choice with an F.R.C.S. and a seat on the Council, one would feel that, at any rate, the Council took some interest in and appreciated to some extent the administrative capacity of its members.

The other alternative I suggested was that under its present Charter the Council could constitute a quarterly meeting of Members for the purpose of acting as a legislative and consultative body; their resolutions would then have to come before the Council for ratification before becoming valid.

The present condition of the Council is that they take no interest in or care for the present needs of the medical profession, as represented by the great body of Members, and that therefore we who are Members of the College possess no legislative body and no organization which will protect or help us in the times of stress through which we are passing.

Since the Council will neither do the work that is required, nor allow others to do it, the only alternative is to take steps to alter the Charter, and the annual meeting decided that within certain limits this should be done.

UNIVERSITY OF CAMBRIDGE.

THE following degrees have been conferred:

M.D., B.A.—I. Peters.
M.B., B.C.—J. B. Hance, R. Hodson.
M.B.—H. F. Comyn.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examination indicated:

THIRD M.B., B.S. (*Both Groups*).—*†H. J. O. Ewing, *H. L. H. Greer, *A. E. Hallinan, *L. M. Hadell, *A. C. Palmer, *C. E. Thornton, J. Appleyard, C. H. Attenborough, Margaret M. Basden, A. C. L. O. Bilderbeck, G. F. Bradley, A. J. Clarke, R. J. Clausen, F. W. T. Clemens, J. A. Cowan, J. M. Curé, J. P. Davies, R. D. Davy, S. F. Dudley, W. H. Eggar, Pattie R. Elliott, A. S. Erulkar, D. M. Gibson, C. E. A. Goddard, C. F. Hacker, C. C. Harrison, G. M. Heiron, P. H. Henson, M. Hocken, T. H. Holroyd, J. M. Joly, W. H. Jones, T. P. Kilner, W. Leslie, Muriel A. Lloyd, Margaret J. M'Enery, G. Matthews, H. B. Parker, Hilda M. Pollard, W. J. A. Quine, H. M. Rashbrook, A. E. Roberts, A. D. Rope, D. Ross, A. L. Shearwood, H. Smith, E. N. Snowden, E. S. Sowerby, J. Vaughan-James, H. B. Walker, E. W. Whiting, G. Whittington.

* Passed with Honours. † University Medal.

Group I Only.—T. I. Bennett, Mabel K. Bishopp, G. M. Campbell, A. S. Cohen, M. B. Cooper, W. E. Milligan, B. Woodhouse.

Group II Only.—F. C. Alton, J. Bostock, L. G. Bourdillon, G. J. Bowen, A. R. C. Doorly, H. W. Evans, C. H. Gould, F. A. Grange, W. E. Kingdon, L. Levene, R. J. M. Love, Ethel M. Magill, W. J. Morris, J. L. Priston, M. Radford, C. S. L. Roberts, W. Simpson, J. S. Sloper, F. G. A. Smyth, H. J. D. Smythe, H. Webb, A. H. White.

UNIVERSITY OF SHEFFIELD.

Department of Pathology.

Mr. J. H. Dible, M.B., Ch.B.Glasg., has been appointed to the post of Junior Demonstrator in Pathology, vice Dr. Douglas, resigned.

For the John Hall Gold Medal in Pathology William Barnsley Allen and Gordon Fowler Stones have been bracketed equal.

UNIVERSITY OF EDINBURGH.

University Court.

At a meeting of the Edinburgh University Court on November 17th, Principal Sir William Turner in the chair, the Senatus reported that William Russell, M.D., F.R.C.P.E., had presented his commission as Moncrieff Arnott Professor of Clinical Medicine, and that he had been duly admitted a member of the Senatus Academicus. It was reported that the Senatus had elected Professor Harvey Littlejohn, M.D., as one of its assessors on the University Court, in succession to Sir Thomas R. Fraser. The Court resolved to record in its minutes its sense of the valuable services rendered to the University Court by Sir Thomas Fraser during his tenure of office extending over a period of fully ten years.

Dr. Carnegie Dickson was appointed Lecturer on Applied Bacteriology. On the recommendation of the Senatus, recognition was granted to the following extra-academical teachers, whose courses of instruction shall qualify for graduation in Medicine: F. Stanley Kipping, Ph.D., D.Sc., University College, Nottingham (Chemistry); Miss Jessie E. Minor, Huguenot College, Wellington, South Africa (Chemistry). Committees were appointed to report as to several additional examinerships about to fall vacant, including Veterinary Hygiene, Medical Physics, Clinical Surgery, and Practical Surgery.

It was also agreed to grant the use of rooms in the University in connexion with the Congress of the Royal Institute of Public Health, to be held in July next.

SOCIETY OF APOTHECARIES OF LONDON.

The following candidates have been approved in the subjects indicated:

Surgery.—*†H. V. Capon, *†W. R. Sadler, †H. C. Wright.
Medicine.—*G. F. Malden, *†B. C. Piercy, *†D. Schonken, *W. Smith.
Forensic Medicine.—C. Bluett, A. K. S. Wyborn.
Midwifery.—E. M. D. N. Baker, L. Baumgarten, C. Bluett, B. C. Piercy, D. Schonken, J. D. Schonken.

* Section I. † Section II.

The diploma of the Society has been granted to Messrs. W. R. Sadler and H. C. Wright.

Obituary.

MATHIEU JABOULAY, M.D.,

PROFESSOR OF CLINICAL SURGERY, UNIVERSITY OF LYONS.

Among the victims of the railway accident at Melun on November 4th was Professor Jaboulay, the distinguished surgeon of Lyons, whose remains were not found till November 8th. He was born at Saint-Genis-Laval, near Lyons, in 1860, and studied medicine at the Lyons Faculty. He was appointed demonstrator of anatomy and head of the anatomical department in 1886, almost immediately after taking his doctor's degree. In 1888 he won the title of *professeur agrégé*, receiving a very high compliment from Professor Farabeuf on the occasion. After serving as assistant under Poncet, he was in 1892 appointed surgeon to the hospitals, and in 1902 succeeded Ollier in the Chair of Clinical Surgery. He was a singularly rapid and skilful operator, and his teaching brought crowds of students to his lectures. He was a man of great originality of mind, and among the subjects to which he devoted special attention were operative procedures for the relief of gastric crises, the treatment of exophthalmic goitre by section of the sympathetic nerve, incontinence of urine, exothyropexy, trophic disturbances of the lower limbs, vascular anastomosis, and perforating lesions. Of his works may be mentioned a treatise on the surgery of the nerve centres, the viscera, and the limbs; lectures on clinical surgery, a monograph on hernia, and a number of memoirs on different subjects. He invented an anastomotic button intended to take the place of sutures in gastro-intestinal operations and to ensure greater rapidity in the completion of operations. He was the first in France to perform choledochotomy. In recent years he gave much time to researches on cancer, which he believed to be of parasitic origin. In spite of a somewhat distant and retiring disposition due to modesty, he was among the French surgeons best known in foreign countries. The coldest of men in appearance, he was in reality most affectionate, and to intimate friends most open, fascinating, and generous. He was a man of rare disinterestedness, and was held in the highest respect by his colleagues. His loss is greatly felt, not only by his own school of Lyons, but by the whole of France. His funeral took place at Lyons on November 13th. The obsequies were held in the chapel of the Hôtel-Dieu. The municipal council has decided to give his name to one of the streets of the city.

JAMES ACWORTH ANGUS, M.R.C.S., L.S.A.,

NEWCASTLE.

The death of Dr. James Acworth Angus, on October 18th, removed one of the older medical practitioners in Newcastle-upon-Tyne.

Descended from an old yeoman family, he was born in 1836 at Gateshead, and received his medical education at the Newcastle School of Medicine; he took the diploma of M.R.C.S.Eng. in 1857, and after an experience of country work settled in general practice in Newcastle-upon-Tyne. In addition to carrying on an extensive practice he had held the posts of Medical Superintendent of the Newcastle-upon-Tyne Hospital for Incurables, and of Honorary Surgeon to the Hospital for Diseases of Skin. His contributions to medical literature included "The Treatment of Spina Bifida" (British Medical Journal, 1875), and "Haemorrhage in Abortion" (ibid., 1879).

On the formation of the Newcastle Rifle Volunteers he was appointed its first Surgeon, and had for his commanding officer another medical man—the late Sir John Fife.

Dr. Angus was a man of fine physique, fond of outdoor sports, and was much respected by his medical brethren. He was a Conservative in politics, but took no part in public affairs. He died of a syncopal attack in his 78th year, and his remains were cremated at Darlington, the ashes being subsequently interred at Elswick, in the presence of a large gathering of relations, old patients, and many of the medical profession.

He was twice married, and is survived by his second wife, three sons and a daughter. One son, Mr. H. Brunton Angus, is joint Professor of Surgery to the University of Durham.

CHARLES McBURNEY, M.D.,

EMERITUS PROFESSOR OF SURGERY, COLUMBIA UNIVERSITY, NEW YORK

Dr. McBurney, whose death was mentioned in the Journal of November 22nd, had just returned from a shooting expedition; his death was due to heart disease. He was one of the foremost surgeons in the United States, and was called in as a consultant when President McKinley was shot in 1901. He was born at Roxbury, Massachusetts, in 1845, and after leaving school entered at Harvard, where he took the degree of B.A. in 1866, proceeding to that of M.A. in 1869. On leaving Harvard he studied medicine at the College of Physicians and Surgeons, Columbia University, New York, where he took the degree of M.D. in 1870. He then held the post of interne at Bellevue Hospital for a year and a half, after which he continued his studies in London, Vienna, Berlin, and Paris. In 1873 he was appointed demonstrator of anatomy at the College of Physicians and Surgeons in New York; in 1882 he became lecturer on operative surgery, and in 1889 was elected to the chair of surgery and became head of the department. Increasing practice made such demands on his time that in 1902 he resigned the chair of surgery, though he continued to teach clinical surgery till 1907, when he was made Emeritus Professor. He was on the staff of several of the hospitals of New York, but his principal work was done at the Roosevelt Hospital, where in 1888 he was placed in full charge of the surgical service.

His contributions to the literature of surgery were numerous and valuable. Among the principal are an essay on "The Technic of Aseptic Surgery" in Gould and Warren's *International Textbook of Surgery* (1900), and a paper written in conjunction with Dr. Allen Starr, entitled, "A Contribution to Cerebral Surgery," which appeared in the *American Journal of the Medical Sciences*, April, 1893. The paper in which he described what is now universally known as McBurney's point was entitled "Experience with Operative Interference in Cases of

Disease of the Vermiform Appendix," and was read before the New York Surgical Society on November 13th, 1889, It was his work in connexion with appendicitis which made him best known, but he had many other titles to fame. He was one of the first to adopt aseptic measures, and the technique which he devised for this purpose at the Roosevelt Hospital is said to afford a model not yet superseded. He invented a number of procedures and instruments which have been widely adopted by surgeons. He was a man of great breadth and originality of mind, and as a teacher was before all simple and practical. He had the power of inspiring confidence both in his students and his patients. He was an Honorary Fellow of the Royal College of Surgeons of Edinburgh and the College of Physicians of Philadelphia, a member of the Surgical Society of Paris, the Roman Medical Society, the Medical and Surgical Society of Constantinople, the New York Academy of Medicine, the New York State Medical Association, the New York County Medical Society, the New York Surgical Society, the Medical and Surgical Society, and the Practitioners' Society.

For several years before his death Dr. McBurney had retired from practice.

DR. WILLIAM RUSHTON SHORTT, died suddenly at Ealing on November 9th. He was educated at St. George's Hospital and at Durham University, where he graduated M.B. in 1887, B.S. in 1888, and M.D. in 1893. He took the diploma of M.R.C.S. and L.R.C.P.Lond. in 1890. After qualifying he served for some time as assistant medical officer of the Durham County Asylum. He then went to South Africa, where he was in practice at Johannesburg. During the South African war he served as a civil surgeon in the Natal Field Force from 1899 to 1901, and was present at the relief of Ladysmith. While in South Africa his health suffered, and he never entirely recovered. He acted for some time as surgeon on the Holt Line of steamers, and also practised at Dartford, but he completely broke down in health several years ago, and had since been living in retirement.

THE profession in Australia, particularly in Victoria, has recently lost one of its finest and most respected members by the death of Dr. FREDERICK JOHN CLENDINNEN; it took place in the Harold Fink-Hospital, Park Lane, on November 6th. He was born in Melbourne in 1860, and received his early education at the Scottish College, where he was captain of the school during his last year. His medical training was obtained in London, and he afterwards studied in Edinburgh and Brussels. He returned to Melbourne, and soon developed a very extensive practice in that city. The study of *x* rays attracted him whilst this subject was in its infancy, and eventually all his time and thoughts were given to a study of the subject, not only from the clinical but the theoretical and mechanical side. Only a few weeks before his death he was engaged with the makers of *x*-ray apparatus in perfecting some ideas he had. Like most of the pioneers of this work, he suffered severely from *x*-ray burns, which assumed a malignant type necessitating amputation of three fingers. Still he worked on, and early this year visited England as a member of the International Congress, where his papers on radiology and colour photography were highly appreciated. As soon as the Congress was over he had to enter the above institution, where he was operated upon by Mr. Douglas Shields. He rallied somewhat, but his previous sufferings told against him and he died after twelve weeks. He was first Honorary Skiagraphist to the Melbourne Hospital, a post which he still held at the time of his death. His wife—formerly a Miss Welshman—was visiting London with him, and has since returned to her four children who mourn his loss. His eldest son, Dr. J. Clendinnen, will continue his father's work. His untimely death will be a great loss to the profession and citizens of Melbourne.

DEPUTY SURGEON GENERAL JOHN SCARSFIELD COMYN died lately at Southsea. He took the diploma of L.R.S.C.I. in 1857, and subsequently that of F.R.C.S.I. He graduated M.B.Dublin in 1874, and entered the Army Medical Department as assistant surgeon on January 22nd, 1858. He became surgeon in 1870, surgeon-major in 1873, and was specially promoted to brigade surgeon for services in the Egyptian war of 1882, retiring with a step of honorary rank from January 15th, 1883. His only war service was the Egyptian expedition of 1882, when he obtained the medal, with the Khedive's bronze star, as well as special promotion.

LIEUTENANT-COLONEL WILLIAM HENRY GREGG, Bengal Medical Service (retired), died in London on November 6th. He was born on January 30th, 1845, and was educated at Trinity College, Dublin, where he graduated M.B. and M.Ch. in 1869. He took the Sanitary Science Certificate at Cambridge in 1886, and the M.R.C.P. London in 1887. He entered the Indian Medical Service as assistant surgeon on October 1st, 1869, and became surgeon on July 1st, 1873, surgeon-major on October 1st, 1881, and brigade-surgeon-lieutenant-colonel on June 20th, 1894, retiring on December 4th, 1899. He served on the North-East Frontier of India, in the Lushai expedition of 1871–72, and received the medal for that campaign, with a clasp. On his return from service he was posted to civil employ in Bengal, where he was successively civil surgeon of Dinajpur, 1873–6; of Hughli, and lecturer in botany in Hughli College from 1877 to 1886; protector of emigrants, 1886–8; sanitary commissioner of Bengal, 1889–95; and civil surgeon of Bardwan, 1896–9. He was the author of *A Text-book of Botany* for Indian schools, published by Messrs. Thacker, Spink and Co., Calcutta, in 1883.

DEATHS IN THE PROFESSION ABROAD.—Among the members of the medical profession in foreign countries who have recently died are: Dr. J. M. Aguilar, professor of gynaecology in the Medical Faculty of Granada; Dr. Gustav Bouisson, professor in the medical school of Marseilles; Dr. Joseph Grynfeltt, professor of clinical obstetrics in the medical faculty of Montpellier; Dr. Joseph Giustaneani, director of the Sanitary Service of Corsica; Dr. Emmerich Reczdey, head of the second surgical clinic of the University of Budapest; Dr. O. von Schwartzer, lecturer on mental diseases in the University of Budapest, first president of the National Sanitary Council, and vice-president of the Medico-Legal Senate, aged 60; and Dr. Richard H. Trautmann, representative in the Hamburg Hygienic State Institute, who had made a reputation by bacteriological researches in the province of acute and infectious diseases and methods of disinfection, milk sterilization, etc.

Medico-Legal.

DEATH CERTIFICATES AND UNREGISTERED PRACTICE.

AT Watford on November 10th a coroner's inquest was held on the body of a man whose death had been reported to the coroner as being uncertified, and ended in a verdict of death from natural causes. The evidence as recorded in the *Watford News Letter* was to the following effect. The patient fell ill on October 25th, and was attended by Mr. S. I. Lightfoot, who on November 5th asked for a consultation with another medical man, mentioning whom he would like to be summoned. This medical man, on receiving a telephone message, went to the house about midday and found there Mr. Lightfoot, who described the course of the disease and the treatment which had been adopted. The second medical man examined the patient himself, and agreed that it was a case of acute nephritis, and that the treatment that had already been practised was the best that could be adopted. He was summoned again by telephone the same evening, and he again found Mr. Lightfoot there, but the patient was moribund, and nothing more could be done. Subsequently, on being asked to give a death certificate, he visited the registrar and explained that he was unable to do so, partly because he did not think he had seen enough of the patient, partly because of the regulations of the General Medical Council. He was, however, satisfied that the patient had been properly treated, and that the cause of death was acute nephritis.

Before calling on any witnesses to give evidence the coroner, addressing the jury, mentioned that they were probably aware that Mr Lightfoot was a medical man whose name had been removed from the *Register* by the General Medical Council for reasons known to the jury. At the end of the case the coroner added that he did not wish it to be thought that he was at all antagonistic to Mr. Lightfoot, but he was bound to point out that in the case of his attending a patient and death occurring, no medical certificate could be given, and an inquest would have to be held.

FEES FOR MEDICAL WITNESSES AT INQUESTS.

A case has recently been brought to our notice which shows that some doubt exists as to the right of a medical man to claim fees and expenses for attendance at an inquest. In June last an inquest was held at Streatham touching the death of a nine days' old child. The death had resulted from an accident received at birth for which no one was to blame. The doctor who had been in attendance having left for his holidays received a blank certificate which he filled in, attributing death to "injury at birth." He was subsequently subpœnaed to attend the inquest. At the inquest, according to a report in the *South London Press* of June 20th, the deputy coroner "asked the doctor why, when he knew the death was due to some violence, he granted a death certificate and failed to inform the coroner." The doctor replied that except in the case of death in a lunatic asylum, prison, or inebriates' home, a doctor could give a death certificate, whether the death was the result of violence or a natural death. He said it was the registrar's duty to inform the coroner, not the doctor's, although in practice doctors did almost always inform coroners as a matter of courtesy. The deputy coroner then said: "I disagree. You grant a death certificate which no registrar in the kingdom could possibly have accepted, and any death not due to natural causes you must report to the coroner." The doctor here concerned has informed us that the coroner refused top ay his travelling expenses, alleging that he had no power to do so, and that the doctor had put himself in a false position by his own action. The doctor accordingly issued a writ, with the result that the full amount was paid into court. We do not agree with the coroner's assertion that it was the duty of the doctor to inform the coroner. It would be instructive to see the section of the Act of Parliament which imposes any such duty. That he was admittedly wrong in withholding payment of expenses is apparent from the fact that they were paid when pressure was brought to bear. Although the Coroners Act provides for the payment of the modest fee of one guinea to the medical witness, statutory regulations are in force which provide for the payment of travelling expenses.

Medical News.

The Home Secretary has appointed Mr. W. P. G. Graham, M.B., M.R.C.S., and Mr. G. F. Rogers, M.A., M.D., to be Inspectors of Vivisection under the Cruelty to Animals Act, 1876.

The Government of the Gold Coast has voted a sum of £250 to the fund raised by Mr. Austen Chamberlain for the extension and development of the London School of Tropical Medicine.

A proposal has been made to the municipal council of Paris to call a street by the name of the late Dr. Lucas-Championnière. The proposal has been favourably reported on to the Administration.

At a special convocation held on November 5th the University of Toronto conferred the honorary degree of Doctor of Laws on Sir Rickman Godlee, President of the Royal College of Surgeons of England.

The following gentlemen have lately become vice-presidents of the Research Defence Society: Sir Hugh Bell, Sir John Brunner, the Dean of Ely, Lord Harlech, Sir John Prescott Hewett, Sir William Mather, Mr. H. S. Wellcome, and Mr. H. G. Wells.

On the occasion of the visit of M. Poincaré, the President of the French Republic, to Madrid, he sent the insignia of the "Palmes Académiques" to Dr. George V. Perez of Orotava, who has not infrequently made original contributions to our columns.

The death is announced, at the age of 68, of Dr. Clement Godson, who was at one time assistant obstetric physician to St. Bartholomew's Hospital and physician to the Samaritan Free Hospital. We propose to publish an account of his career in an early issue.

At the meeting of the Royal Society on Friday next Sir Francis Darwin will read two papers, the one on a method of studying transpiration, and the other on the effect of light on the transpiration of leaves. Mr. J. H. Mummery will read a paper on the process of calcification in enamel and dentine.

As announced in the advertisement columns, an examination for not fewer than twelve commissions in the Indian Medical Service will be held in London on January 26th and the five following days. Forms of application and further particulars can be obtained from the Military Secretary, India Office, London, S.W.

The meeting of the school medical service group of the Society of Medical Officers of Health will be held on Saturday, December 6th, at 2 p.m., at the Royal Sanitary Institute, 90, Buckingham Palace Road, London, S.W., and not at 1, Upper Montague Street, Russell Square, as previously announced. All officers in the school medical service are invited to attend this meeting. Further particulars can be obtained from the honorary secretary, Dr. Armly Ashkenny, Medical Department, Education Office, Council House, Birmingham.

An Intercolonial Conference and Exhibition on National Health, to which the Council of the British Medical Association at its last meeting nominated Mr. Domville to be its delegate, will be held in London in May, 1914 (18th to 21st) under the auspices of the Victoria League. The object of the gathering is to effect an interchange of knowledge between the different sections of the empire on the important question of housing, including town planning, model dwellings and workmen's houses, and the care of child-life, including infancy and health, the school child, and the child as wage-earner. The conference will be opened by Earl Grey.

In commemoration of the fact that Sir Henry Roscoe attained the age of 80 last January, 140 students of chemistry at Owens College, Manchester, during the time when he held the chair there, subscribed the cost of a bust for presentation to the Chemical Society of London. At the meeting of the So iety on November 20th an address was presented to Sir Henry Roscoe, in the name of the donors, by Sir Edward Thorpe, who said that among the old pupils at Manchester were men now of great eminence, occupying responsible positions in the United States, Germany, Russia, and Japan, as well as in Great Britain and in British Dominions beyond the sea. The ceremony was attended by a large gathering, those present including Sir Thomas Barlow, President of the Royal College of Physicians of London, and Sir J. Rose Bradford, M.D., one of the secretaries of the Royal Society.

A number of members of the medical profession enjoyed the hospitality of the Western Pharmacists' Association (of London) on the occasion of the twenty-fourth annual dinner held at Frascati's Restaurant in Oxford Street on November 26th. Brief and excellent speeches, a delightful musical programme, and a well-served dinner combined to make the evening pass very agreeably. To the toast of "The Medical Profession" Sir Thomas Boor Crosby and Sir Alfred Pearce Gould replied. Sir Thomas Crosby charmed the guests with his reminiscences of medicine as it was fifty and more years ago, and an allusion to his occupancy of the onerous position of Lord Mayor of London when an octogenarian drew sympathetic applause. Sir Alfred Pearce Gould discussed the difference between a profession and a trade, and said that for the same reason that medicine was a profession—that the due performance of duties must be largely a matter of personal honour—pharmacy might also be described as a profession. Sir Alfred also spoke with satisfaction of the separation of dispensing from prescribing under the Insurance Act. Dr. S. H. Browning proposed "The Western Pharmacists' Association," and the Prsident, Mr. John D. Marshall, replied. Mr. F. H. Crossley Holland proposed "The Visitors," and Mr. R. H. Jocelyn Swan, F.R.C.S., responded.

Dealing with the movement in favour of open-air schools, Sir George Newman, in the third Chadwick Lecture on November 18th, said that its real triumph had not been that it had covered the country with open-air schools, but that it had taught some new applications of educational systems. The effect of the movement on school building had been remarkable, for the whole type of the construction of buildings for educational purposes was now being reconsidered. The origin of the movement he ascribed to the work of the Children's Country Holiday Fund, which had proved immensely beneficial to debilitated children. The next step was the establishment in country places of schools for town children, as at Moberley for Manchester children. Then came the holding of classes in playgrounds, public parks, and other like places, and finally in succession the open-air day school, the open-air residential school, and more recently the sanatorium school. In open-air schools the weight of individual children increased on an average by 2½ lb. each month—a greater increase than that shown by children for whom school meals were provided; the average annual increase in chest measurement was approximately 2 in.; the children gave satisfactory responses when various muscle tests were applied, and showed a larger proportion of haemoglobin than children educated indoors, as well as improved carriage; they also figured well when their mentality was tested by time reaction tests and by others dealing with the acuteness of sense organs. Finally, there was a lesser prevalence of zymotic diseases among children attending open-air schools, and a child who had had the benefit of being taught for a time at an open-air school was more regular in its attendance than formerly.

Letters, Notes, and Answers.

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

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AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C., on receipt of proof.

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

CORRESPONDENTS not answered are requested to look at the Notices to Correspondents of the following week.

TELEGRAPHIC ADDRESS.—The telegraphic address of the EDITOR of the BRITISH MEDICAL JOURNAL is *Aitiology, Westrand, London.* The telegraphic address of the BRITISH MEDICAL JOURNAL is *Articulate, Westrand, London.*

TELEPHONE (National):—
2631, Gerrard, EDITOR, BRITISH MEDICAL JOURNAL.
2630, Gerrard, BRITISH MEDICAL ASSOCIATION.
2634, Gerrard, MEDICAL SECRETARY.

☞ *Queries, answers, and communications relating to subjects to which special departments of the* BRITISH MEDICAL JOURNAL *are devoted will be found under their respective headings.*

QUERIES.

TREATMENT OF TERTIARY SYPHILIS.

A COUNTRY PRACTITIONER has a case of syphilitic ulcer of the leg about 3 in. square, which is improving very slowly under potassium iodide. He wishes to know whether salvarsan could be employed with advantage, and if so, how it should be administered.

IONIZATION.

R.A.M.C. wishes to treat small warty growths (adenomata) on the face by magnesium ions. He proposes to cover small areas of the skin with cotton-wool soaked in a solution of magnesium sulphate and then pass a current. He wishes to know whether discoloration or any other bad result to the skin between the growths might ensue.

TREATMENT OF DISSEMINATED SCLEROSIS.

E. E. asks for suggestions as to the treatment of a case which he regards as one of disseminated sclerosis of twenty-eight years' standing, coupled with some neurasthenia. The patient complains of loss of power in walking, giddiness, constant noises in the ear, and inability to sit or stand for long. The vision in one eye is normal for her age, but in the other has been dim for three years; a scotoma exists. The urine is normal, the reflexes normal, and the Wassermann reaction negative. The diagnoses made by various specialists have ranged from neurasthenia to middle-ear disease. Bromides, sedatives, electricity, massage, and rest cures have all been tried in vain.

ANSWERS.

INSTITUTION TREATMENT OF MICROCEPHALIC INFANT.

O. T.—If it is proposed to place an imbecile child in a "house" or "institution" registered under the Idiots Act, 1886, which would appear to be the most appropriate measure, the matter is simple. All that is required is a brief statement of particulars by the parent or guardian and a certificate by a medical practitioner that the patient is imbecile and likely to derive benefit from residing in the place selected and named in the certificate. The statement and certificate must be in the form prescribed by the Act.

If, on the other hand, it is proposed to deal with the case under the Lunacy Act, this too is possible, as no doubt a microcephalic imbecile would come within the term "a person of unsound mind," but it would be necessary for the parents to present a petition supported by two medical certificates and for a judicial order to be made. Presumably this course would only be taken if it were intended that the child should be received "as a single patient."

The age of the child makes no difference in either case as regards certifiability, provided there is evidence for the doctor of unsoundness of mind. The only difficulty in regard to age is that some institutions registered under the Idiots Act decline children under 7. The Idiots Act will not be superseded by the Mental Deficiency Act till April, 1914.

LETTERS, NOTES, ETC.

THE ASSOCIATION AS GUARDIAN OF OUR INTERESTS.

DR. J. PRICE WILLIAMS (Manchester) writes: Is it possible for the Association to act at all efficiently in this capacity? I believe not. What does history tell us? The Notification of Births Act at one fell swoop deprived our profession of (1) its right to guard the secrets of its unfortunate patients, and (2) its right to demand and obtain payment for services rendered—a right which it has hitherto shared with all free citizens. The subtle influence of this precedent on our present and future position is incalculable, but must be apparent to every one who gives serious thought to the question. How does the Association stand in the matter? It certainly opposed the bill, but owing to the somnolence of the rank and file the opposition was negligible, and, owing to very bad judgement in high quarters, such opposition as was offered was on the wrong lines. However, I believe the Association did the best it could in the circumstances. But what followed? No sooner was the "adoptive" Act passed, than we found Sir James Barr, and several other consultants and specialists, who were, or had been, officials of the Association, urging the Corporations of Liverpool and Birkenhead to adopt it, and advising the profession in these towns to quietly submit to the deprivation of their rights contained in it, and a little later two well-known members (one, if not both, officials) arguing in your columns that the Act was really practically innocuous. This was bad enough, but worse was to follow, for a year or two later Sir James Barr was elected President of the Association, the highest honour we could confer upon any one, and a certain amount of glory was reflected on the other gentlemen concerned. As the primary object of the Association is the advancement of medical science, neither I nor any one else can reasonably object to the choice made, and I can conceive no one more worthy to receive such honour, but if we are to regard the Association as the guardian of our interests, what could be more futile? Our President represents us to the public, and at a most critical time last year a speech was made by our President on an official occasion which was calculated to, and probably did, alienate a great deal of public sympathy from us in our fight with the Government. Will history repeat itself? It is certain to do so in similar circumstances, and I cannot conceive different circumstances so long as the Association tries to fulfil two such very distinct functions. An association which undertakes to guard our interests nowadays must exist for that purpose alone, and it will have its hands quite full, and it must be able at all times to represent us faithfully to the public through its officials, whether honorary or otherwise. The British Medical Association cannot become such an Association, as it can never give up its primary function, but by continuing to carry out this function efficiently it can very materially assist in maintaining the honour and dignity of the profession, and so render most valuable aid to any medico-political association to which it may hand over the care of our material interests.

PARAFFIN IN ASTHMA AND BRONCHITIS.

DR. F. BROADHURST (North Collingham, Newark) writes: I have noticed that cases of asthma and bronchitis are much better when their bowels are freely open. The public believe that paraffin is good for all lung complaints. To my asthma and bronchitis patients I have given a tablespoonful of paraffin three times a day with marvellous results. All relieved, many cured. A faith cure undoubtedly.

HAIR DYES.

DR. WM. HARDMAN (Bispham, near Blackpool) writes: In the issue of the BRITISH MEDICAL JOURNAL for October 11th, p. 904, is an article by Dr. Semon on "Acute Facial Dermatitis Produced by a Hair Dye." He says of potassium permanganate and hydrogen peroxide that they "are apparently less often the cause of acute inflammation." I have never seen dermatitis follow the use of hydrogen peroxide, though years ago it was much used to turn the hair a beautiful, though unnatural, canary colour. He says with regard to these two drugs: "Their main effect is to bleach the hair." This is true of hydrogen peroxide, but absolutely untrue as respects potassium permanganate. For years I recommended this material as a good and harmless hair dye, and many persons used it regularly for years. It does not bleach the hair, but dyes it a good chestnut. It never causes the slightest irritation.

PERIODICAL PUBLICATIONS.

MESSRS. W. DAWSON AND SONS, LIMITED, wholesale newsagents of London (Cannon House, Bream's Buildings, E.C.), have sent us a list of English, colonial, and foreign newspapers, and other periodical publications showing the subscription to each. The pamphlet, which is very compact, also contains a classified list of periodical publications, showing among other things those which are particularly addressed to the various professions and trades.

REX *v.* HAMILTON.

DR. W. H. GIMBLETT (86, Sutherland Avenue, Maida Vale, W.) has received the following subscription in addition to £61 12s. already acknowledged: Dr. Gouldesbrough (London), £1 1s.

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An average line contains six words.

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NOTE.—It is against the rules of the Post Office to receive *postes restante* letters addressed either in initials or numbers.